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ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)
MAY 76 G L DONALDSON

UNCLASSIFIED

765-5608-001

HDL-CR-76-146-1

DAA639-75-C-0146

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1 OF 3
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HDL-CR- 76-146-1

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HDL-CR-76-146-1, Fabrication and Testing of MOS Scaler/Logic and Overhead Safety Integrated Circuit. Gerald L. Donaldson

AD A 038513

MAY 1976

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FABRICATION AND TESTING OF

MOS SCALER/LOGIC AND OVERHEAD SAFETY INTEGRATED CIRCUIT

Prepared by

COLLINS COMMERCIAL TELECOMMUNICATIONS DIVISION

¹ ROCKWELL INTERNATIONAL

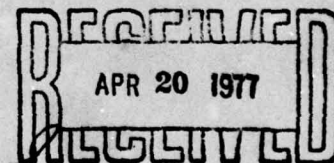
4311 JAMBOREE BOULEVARD

² NEWPORT BEACH, CALIFORNIA 92663

Under Contract

DAAG39-75-C-0146

DDC



U.S. Army Materiel Development

and Readiness Command

HARRY DIAMOND LABORATORIES

Adelphi, Maryland 20783

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HDL-CR-76-146-1, Fabrication and Testing of MOS Scaler/Logic and Overhead Safety Integrated Circuit, Gerald L. Donaldson.

HDL-CR- 76-146-1

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DAC	Soft Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
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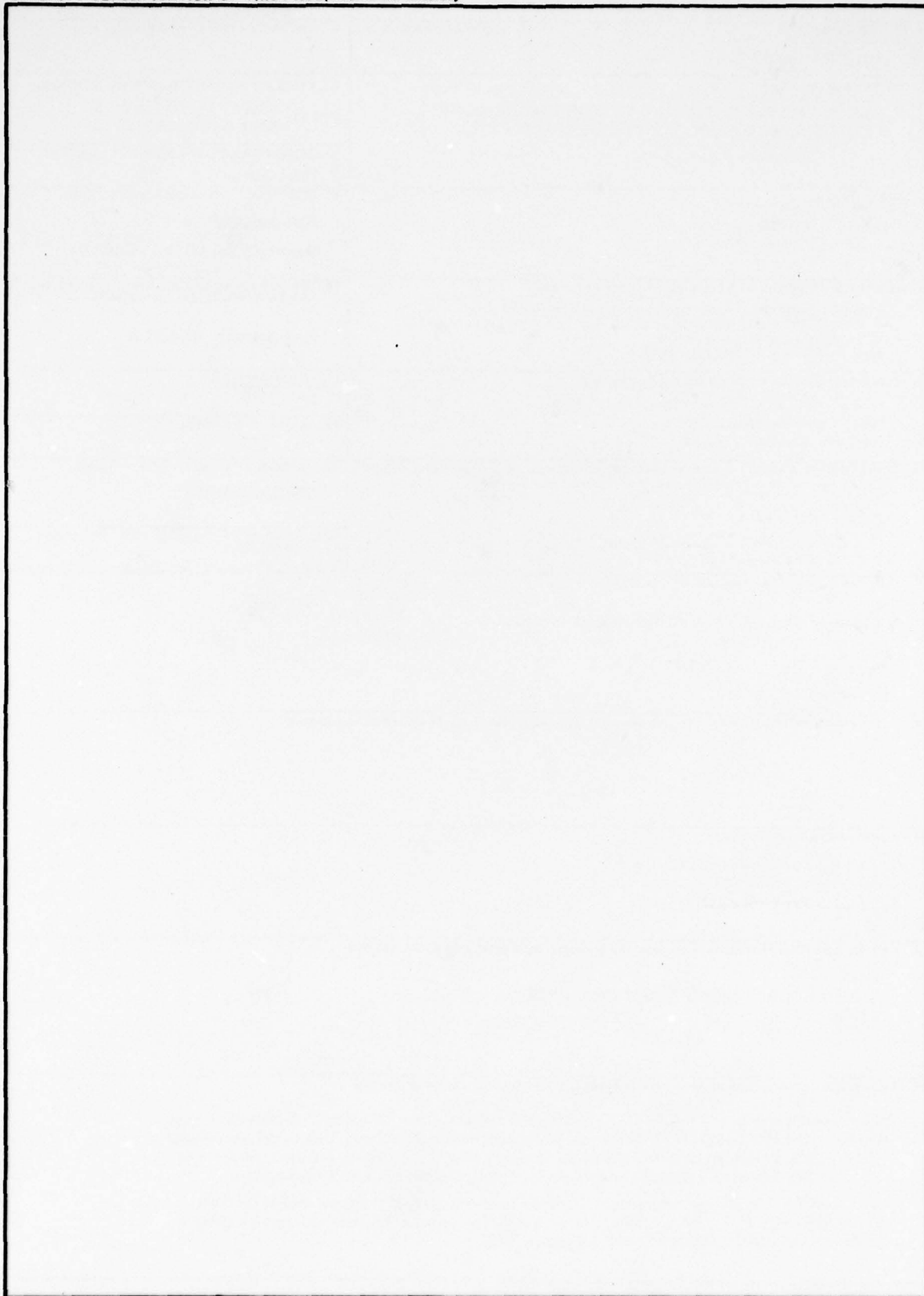
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) MOS SCALER/LOGIC AND OVERHEAD SAFETY FUZE		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents the results of the fabrication and test effort of a MOS/LSI integrated circuit used in the XM587E2/XM724 Electronic Time Fuze designed by Harry Diamond Laboratories (HDL). The integrated circuit performs the scaling and overhead safety functions of the fuze system. The device was designed and produced under contract DAAG39-74-C-0161. The MOS/LSI circuit was successfully fabricated and tested to all requirements of contract DAAG39-75-C-0146. One thousand first-article devices and six thousand production devices were successfully qualified and then shipped to HDL.		

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CONTENTS

	<i>Page</i>
1. INTRODUCTION	5
1.1 Scope	5
1.2 Background	5
2. FABRICATION	7
3. PACKAGING	9
3.1 Pin Definition	9
3.2 Additional Ceramic Vendors	9
3.3 Injection Molded Plastic Packages	9
4. TEST	10
4.1 Functional and Parametric Testing	10
4.2 Device Testing	10
4.3 Acceptance Testing	10
5. CONCLUSIONS AND RECOMMENDATIONS	16
5.1 Conclusions	16
5.2 Recommendations	16
APPENDICES	
A. COLLINS PROCESS SPECIFICATION 765-4140-001	17
B. TEST PROGRAM FOR FAIRCHILD SENTRY 600 TESTER	23
C. PARAMETRIC RESULTS OF FIRST ARTICLE QUALITY ACCEPTANCE TESTING	91
D. PARAMETRIC RESULTS OF PRODUCTION LOT QUALITY ACCEPTANCE TESTING	181
DISTRIBUTION	271

ILLUSTRATIONS

<i>Figure</i>		<i>Page</i>
1	Logic Diagram of MOS Scaler/Logic and Overhead Safety Circuit	6
2	Microphotograph of MOS Scaler/Logic and Overhead Safety Chip	8
3	Composite of Modified Input Protection Device	11
4	Flow Chart of MIL-STD-883, Method 5004, Class B Screening Process	12
5	Quality Assurance Acceptance Test - Part I	13
6	Quality Assurance Acceptance Test - Part II	14
7	Results of First Article Acceptance Tests	14
8	Results of Production Lot Quality Acceptance Tests	15

1. INTRODUCTION

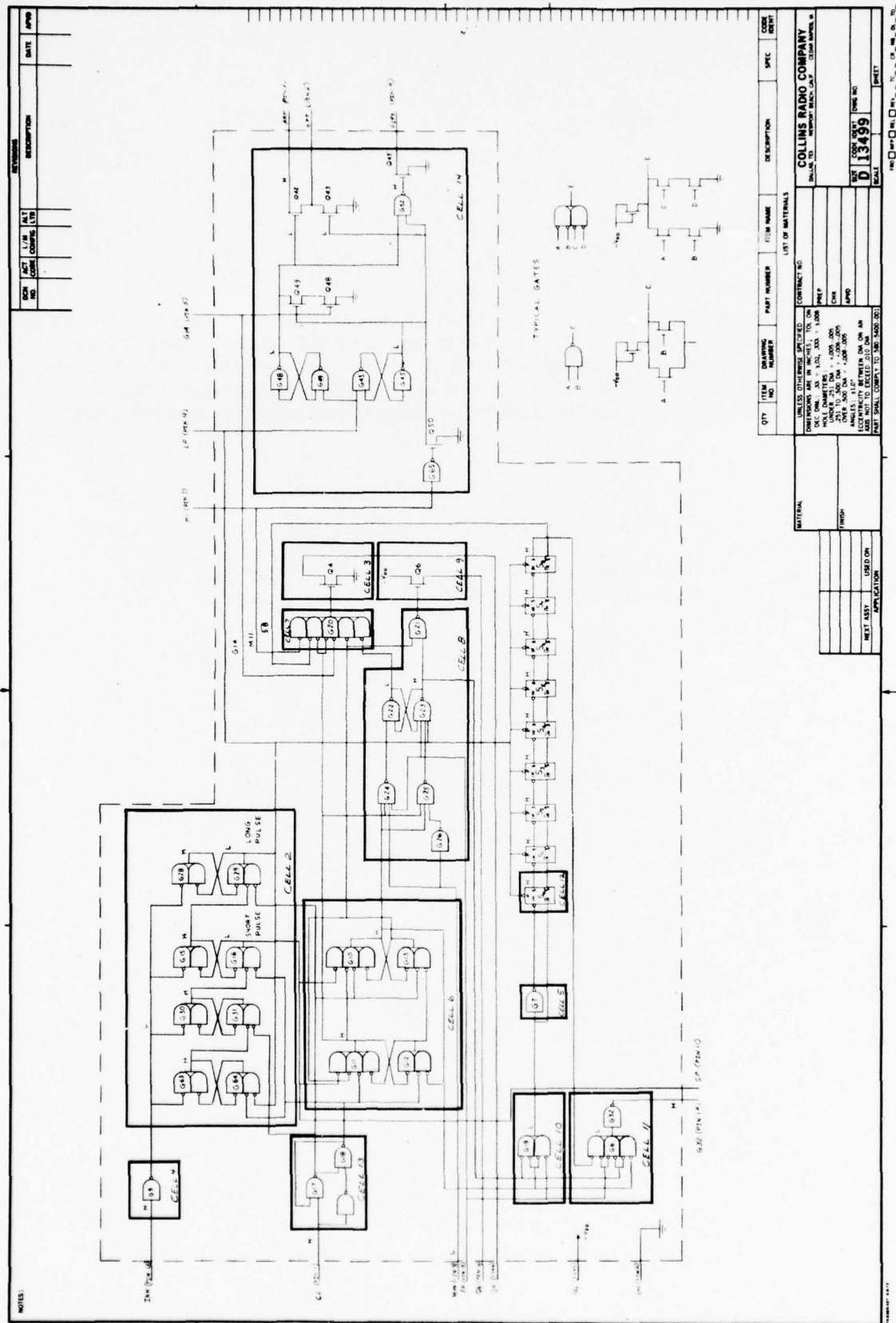
1.1 Scope

The scope of the Harry Diamond Laboratories (HDL) contract DAAG39-75-C-0146 was to fabricate and test 7000 MOS Scaler/Logic and Overhead Safety Integrated Circuits. These devices were assembled in 16 pin, side-brazed, dual-in-line ceramic packages. The circuit operation is defined by HDL Specification Control Drawing 11711256. The circuit provides the scaling and overhead safety functions for the XM587E2/XM724 Electronic Time Fuze currently under development at HDL.

1.2 Background

The MOS Scaler/Logic and Overhead Safety Circuit as specified by HDL drawing 11711256 was originally designed, fabricated, and tested by Collins Radio under HDL contract DAAG39-74-C-0161. The results of this previous contract are enumerated in HDL-CR-75-161-1. Figure 1 is a detailed logic diagram of the MOS Scaler/Logic and Overhead Safety Circuit.

AD14914



2. FABRICATION

The MOS Scaler/Logic and Overhead Safety Circuit was fabricated by using the standard Collins Radio High Threshold PMOS Process. The characteristics of this particular MOS process are shown in appendix A.

Figure 2 shows a microphotograph of the chip after all processing steps have been completed. The chip size is 101.0 X 59.0 mils.

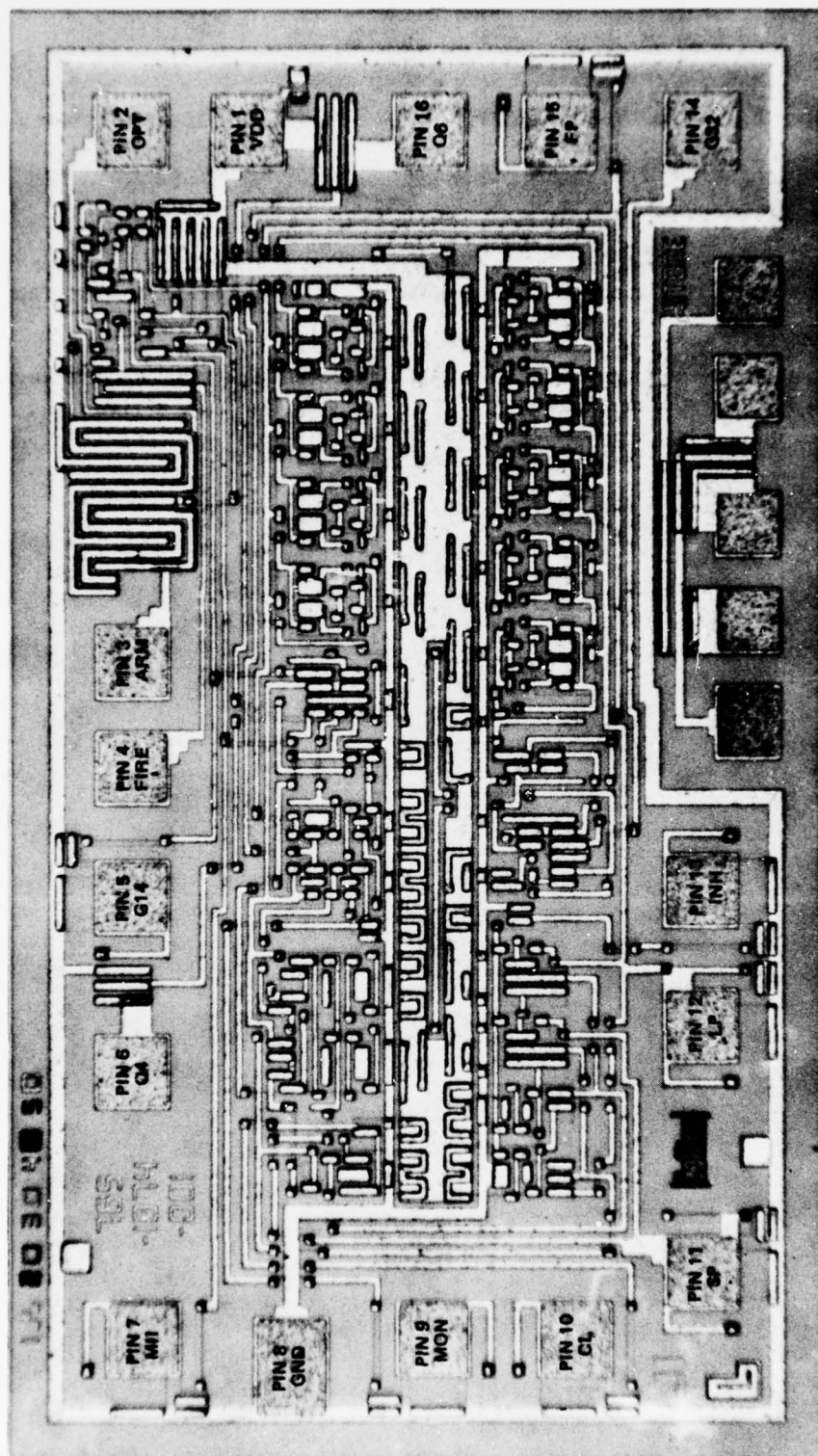


Figure 2. Microphotograph of MOS Scaler/Logic and Overhead Safety Chip.

3. PACKAGING

3.1 Pin Definition

The MOS Scaler/Logic and Overhead Safety Circuit was delivered in a 16 pin, side-brazed, ceramic dual-in-line package. The functional description of each terminal is defined below.

<u>PIN</u>	<u>DESCRIPTION</u>
1	VDD Power Supply
2	OPT Output
3	ARM Output
4	FIRE Output
5	G14 Input
6	Q4 Output
7	M11 Input
8	GND (Substrate)
9	MON Input (Monitor Line)
10	CL Input (Clock)
11	SP Output (Short Pulse)
12	LP Output (Long Pulse)
13	INH Input (Inhibit)
14	G32 Output
15	FP Input (Fuze Power)
16	Q6 Output

3.2 Additional Ceramic Vendors

Only one vendor is qualified to supply the 16 lead side-brazed ceramic dip used for this contract. For large production orders, multiple sources are desirable. For this reason, Collins has researched the other vendors, and if HDL can allow the length dimension to increase from 0.755 to 0.805 in., two alternate sources are available. If a large production order is received, Collins will qualify the additional package vendor(s), provided the package dimensions are acceptable and approved by HDL.

3.3 Injection Molded Plastic Packages

Another alternative to ceramic packages is injection-molded plastic packages. HDL and Collins jointly investigated the encapsulation of the MOS Scaler/Logic and Overhead Safety Circuit in 16 lead-molded plastic dual-in-line packages during the execution of HDL contract DAAG39-74-C-0161. The result of this mutual study is that the MOS Scaler/Logic and Overhead Safety Circuit can meet the HDL quality requirements when encapsulated in a 16-pin molded plastic dual-in-line package. This alternate packaging method will result in a lower unit cost for large production buys.

4. TEST

4.1 Functional and Parametric Testing

Both functional and parametric testing were performed on the HDL Scaler/Logic and Overhead Safety Circuit by a Fairchild Sentry 600 Tester located at the Collins Radio Group, Newport Beach facility.

The test program used was the same as that used on HDL Contract DAAG39-74-C-0161 with three minor exceptions.

- a. In order to provide more efficient and reliable temperature testing capabilities the program was modified to use a naked dip handler system rather than the previously used carrier-based system.
- b. To speed up go/no-go testing the program was modified to bypass the variable data measurements during go/no-go testing. Variables data is still available under test operator control.
- c. Improved test techniques, such as pre-conditioning before variables data measurement, were incorporated for more reliable, large volume testing. The implementation was on the recommendations of the Fairchild Sentry 600 Application group.

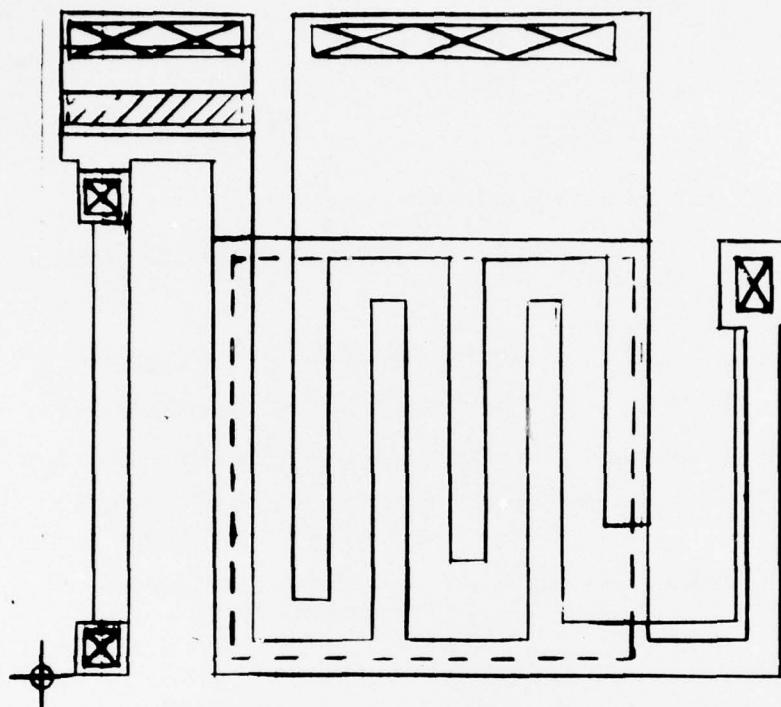
The listing of the Modified Symbolic Source Program used on the MOS Scaler/Logic and Overhead Safety Circuit is contained in appendix B.

4.2 Device Testing

Collins successfully tested all the devices to the specified requirements of HDL Specification Control Drawing 11711256. During the evaluation of the test results it was discovered that a large portion of the reject devices had failed due to a marginal negative input breakdown. Collins Design and Process Engineering has determined that a yield improvement can be achieved if the P-Region spacing on the field inversion transistor of the input protection device is increased from 0.4 to 0.5 mils. This modification can be accomplished via a single layer change (Layer 1). A composite of the modified input protection device is found in figure 3.

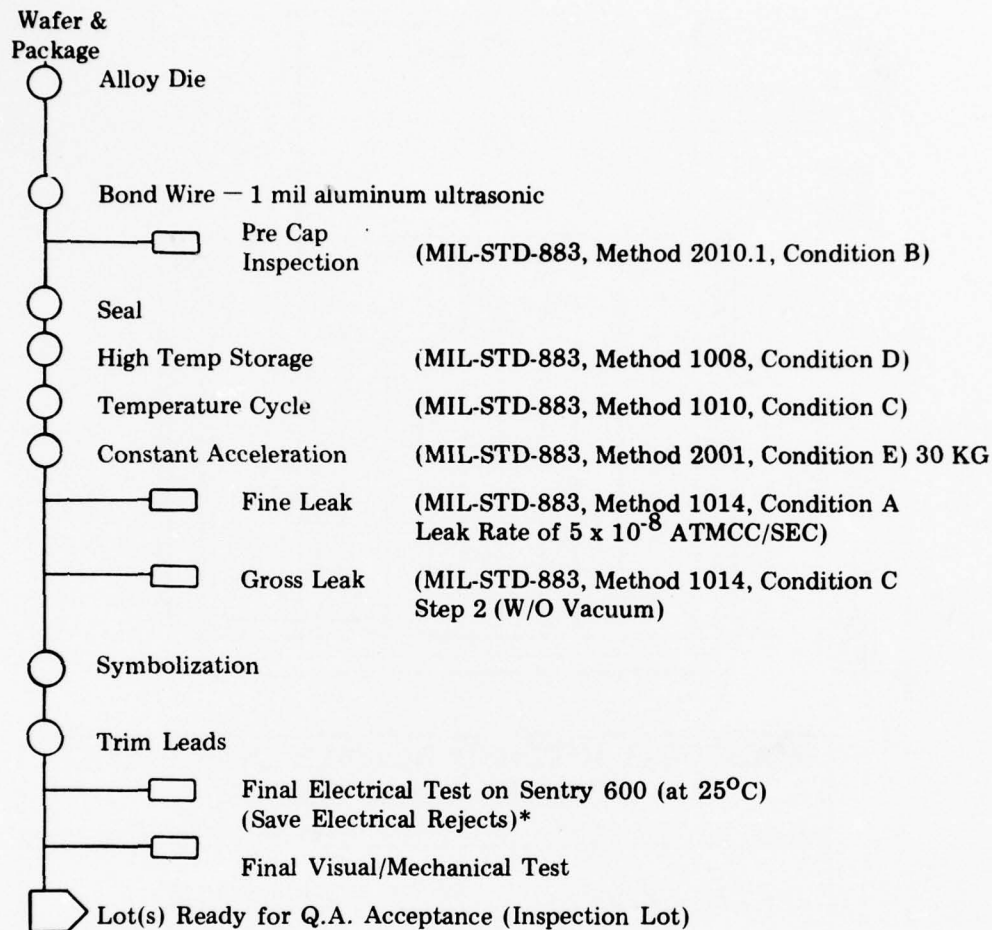
4.3 Acceptance Testing

Collins Radio Group meets all the Product Assurance requirements of MIL-M-38510, Appendix A, in addition to MIL-Q-9858. All MOS Scaler/Logic and Overhead Safety packages delivered to HDL were manufactured per MIL-STD-883, Method 5004, Class B. The Collins implementation of the HDL requirements is shown in the flow chart, figure 4. In addition, 164 devices from the first article lot of 1,000 devices, as well as 164 devices from the production lot, were subjected to the Group A, B and C Qualification Tests defined in HDL Specification Control Drawing 11711256. A flow chart of this Quality Assurance Acceptance Testing is shown in figures 5 and 6. A summary of the results is found in figures 7 and 8.



ROCKWELL INTERNATIONAL CORPORATION			
COLLINS RADIO GROUP			
DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92663 CEDAR RAPIDS, IA 52406			
<i>HDL INPUT PAD/MOSAB</i>			
SIZE	CODE IDENT	DWG NO.	METRIC SI
	13499	602-1608-001	
SCALE 500/1		SHEET 1 OF 1	

Figure 3. Composite of Modified Input Protection Device.



*These electrical rejects could be used in mechanical tests of Q.C. Acceptance.

Figure 4. Flow Chart of MIL-STD-883, Method 5004, Class B Screening Process.

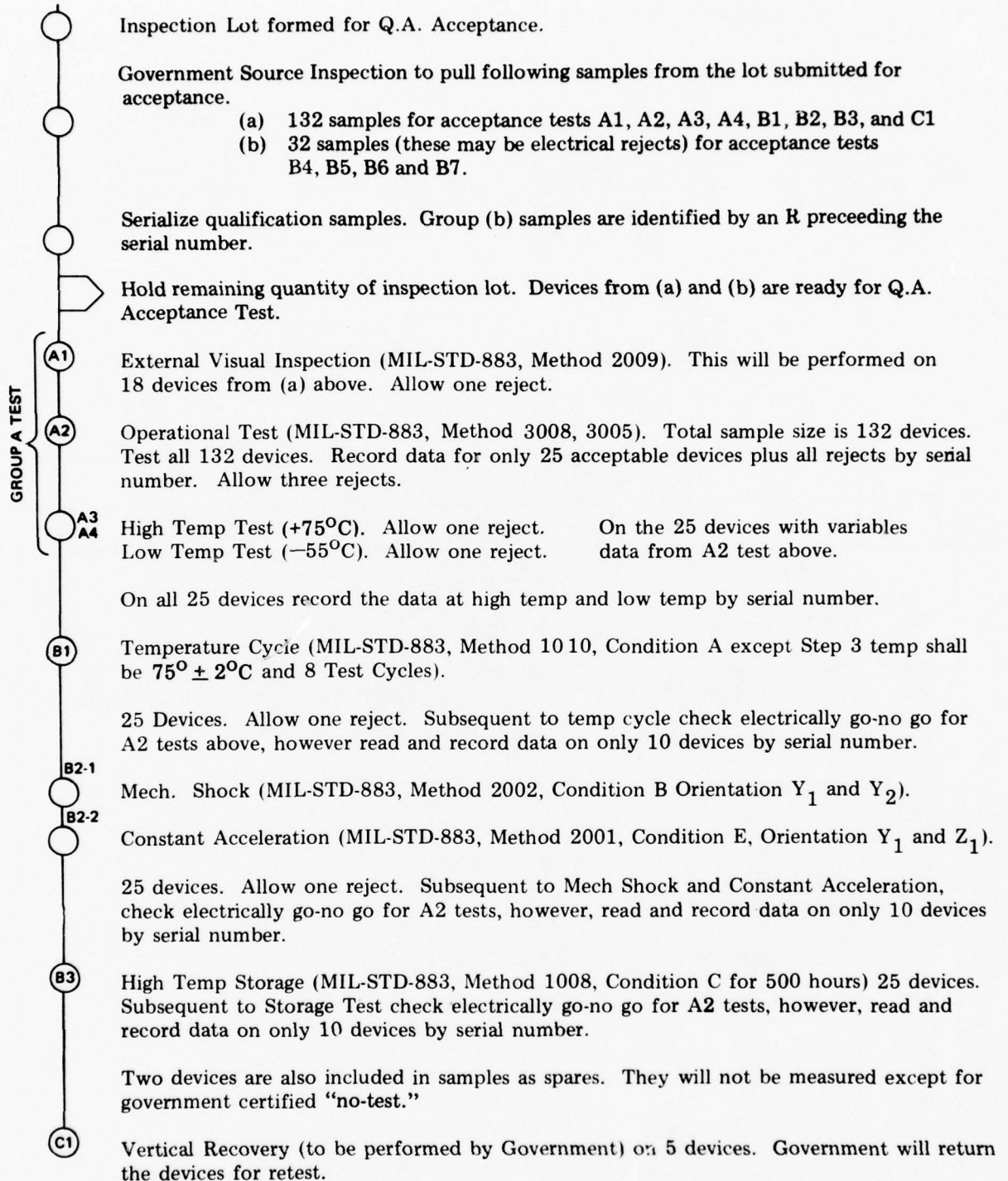


Figure 5. Quality Assurance Acceptance Test - Part I.

DESTRUCTIVE TESTS ON DEVICES NOS. R1 THROUGH R32

8 Devices No rejects allowed.	8 Devices No rejects allowed.	8 Devices No rejects allowed.	8 Devices No rejects allowed.
B4 Solderability MIL-STD-883 Method 2003 All Pins	B5 Lead Integrity MIL-STD-883 Method 2004 Condition B2	B6 Seal MIL-STD-883 Method 1014 Condition A	B7 Internal Dimension Per Drawing

Figure 6. Quality Assurance Acceptance Test - Part II.

SUB-GROUP	RESULTS OF ACCEPTANCE TESTING		
		RESULTS	REMARKS
A1	EXTERNAL VISUAL	NO FAILURES	ONE FAILURE ALLOWED PASSED SUBGROUP REQUIREMENTS
A2	OPERATIONAL TEST	NO FAILURES	
A3 & A4	HIGH & LOW TEMPERATURE TEST	1 FAILURE	
B1	TEMPERATURE CYCLE	NO FAILURES	
B2.1 B2.2	SHOCK AND ACCELERATION	NO FAILURES	
B3	500 HOUR HIGH TEMPERATURE STORAGE	NO FAILURES	
B4	SOLDERABILITY	NO FAILURES	
B5	LEAD INTEGRITY	NO FAILURES	
B6	SEAL	NO FAILURES	
B7	INTERNAL DIMENSIONS	NO FAILURES	
C1	VERTICAL RECOVERY	NO FAILURES	30,000G BY HDL

Figure 7. Results of First Article Quality Acceptance Tests.

SUB-GROUP	RESULTS OF ACCEPTANCE TESTING		
		RESULTS	REMARKS
A1	EXTERNAL VISUAL	THREE FAILURES	LEADS TOO THICK - WAIVER APPROVED BY HDL
A2	OPERATIONAL TEST	NO FAILURES	
A3 & A4	HIGH & LOW TEMPERATURE TEST	NO FAILURES	
B1	TEMPERATURE CYCLE	NO FAILURES	
B2.1 B2.2	SHOCK AND ACCELERATION	NO FAILURES	
B3	500 HOUR HIGH TEMPERATURE STORAGE	NO FAILURES	
B4	SOLDERABILITY	NO FAILURES	
B5	LEAD INTEGRITY	NO FAILURES	
B6	SEAL	NO FAILURES	
B7	INTERNAL DIMENSIONS	NO FAILURES	
C1	VERTICAL RECOVERY	NO FAILURES	30,000G BY HDL

Figure 8. Results of Production Lot Acceptance Tests.

Three subgroup A1 (External Visual) failures occurred during the production lot quality acceptance testing because the leads were 0.01 in. too thick. These failures will be eliminated in the future by a tightened receiving inspection sample measurement of all leads.

It can be concluded that Collins successfully completed the quality acceptance testing as outlined in the HDL Specification Control Drawing 11711256, with the exception of the test dealing specifically with the dual-in-line package. For the test where package failures occurred, a one-time waiver was approved.

The parametric results of first-article and production lot acceptance testing are found in appendices C and D, respectively.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The Collins Radio Group of Rockwell International successfully completed the fabrication and testing of the Scaler/Logic and Overhead Safety Integrated Circuit in accordance with the HDL Specification Control Drawing 11711256. Upon completion of the contract all 7,000 acceptable devices were delivered to HDL.

Several important points resulting from this program are:

- a. The MOS Scaler/Logic and Overhead Safety Circuit chip can be fabricated and tested in production volumes.
- b. The MOS Scaler/Logic and Overhead Safety Circuit meets all requirements over the temperature range of -55 to +75°C.
- c. The MOS Scaler/Logic and Overhead Safety Circuit can be efficiently tested on the Sentry 600 tester.

5.2 Recommendations

The following suggestions are recommended to enhance the fabrication of production quantities of the MOS Scaler/Logic and Overhead Safety Circuit.

- a. Develop guard band test parameters for 25°C production testing.
- b. Encapsulate devices in molded plastic packages for lower unit cost and better shock environment.
- c. Use the high volume/high yield version (P/N 148-1350-001) of the P-Channel, high threshold process (P/N 765-4140-001) used on this contract.
- d. If using ceramic packages, delete the aging requirement from the Subgroup B4 test conditions.
- e. If using ceramic packages, change the package length dimension from a 0.755 to 0.805 in., which will allow up to two alternate sources to be approved.
- f. Modify input protection device to allow a higher breakdown and thus a higher yield.

APPENDIX A
COLLINS PROCESS SPECIFICATION
765-4140-001

REVISIONS							
DCN NO.	ACT CODE	L/M CONFIG	ALT LTR	DESCRIPTION	DATE	APVD	
RELEASED TO	RECORDS		--	RELEASED PER DRN-W64940	5-3-74		
MAY 03	1974						

UNDER REVISION CONTROL

REV STATUS OF SHEETS	REV SHEET	1	2	3	4	5	6	7
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CONTRACT NO.		COLLINS RADIO COMPANY	
		DALLAS, TEX NEWPORT BEACH, CALIF CEDAR RAPIDS, IA	
PREP	<i>F. M. Ruddy</i> 5/1/74	HIGH THRESHOLD/HIGH SHEET/P-CHANNEL OXIDE PROCESS SPECIFICATION	
CHK	<i>John J. Peluso</i> 5/2/74		
APVD	<i>F. M. Ruddy</i> 5/1/74	SIZE	CODE IDENT
	<i>Al Kaplan</i> 5-2-74	A	13499
		DWG NO.	765-4140-001
		SCALE	SHEET 1 of 4

074-8365-421

↑ FRO ☐ NFP ☐ REL ☐ REV__ TC__ CR QNB Z DL OTO

PROCESS SPECIFICATION

765-4140-001

THIS DOCUMENT DEFINES THE MATERIAL AND ELECTRICAL CHARACTERISTICS
FOR A HIGH THRESHOLD P-CHANNEL MOS PROCESS.

MATERIAL CHARACTERISTICS

ORIENTATION PLANE (111)

TYPE - CZOCHRALISKI

DOPING - PHOSPHOROUS (N)

OXYGEN CONTENT - 10^{18} ATOMS/CM³ MAXIMUM

DISLOCATION DENSITY - 500/CM² AVERAGE, 1000/CM² MAXIMUM

RESISTIVITY - 5 ± 1.5 OHM CENTIMETER

MINORITY CARRIER LIFETIME - 5 MICROSECONDS MINIMUM

DIAMETER - $2 \pm .01$ INCHES

THICKNESS - 0.0011 ± 0.0015 INCHES

WAFER FLAT ORIENTATION - PARALLEL TO (110) PLANE $\pm 1^\circ$

FRONT SURFACE FINISH - LESS THAN 3 MICROINCHES RMS

POLISHED FRONT, ETCHED BACK

SIZE A	CODE IDENT 13499	DWG NO. 765-4140-001
SCALE	REV	SHEET 2

074-0365-422 5-0-72

PROCESS PARAMETERS

(VALUES ARE $\pm 10\%$ UNLESS OTHERWISE INDICATED)

P-REGION SHEET RESISTIVITY (4 POINT PROBE MEASUREMENT)	120 OHMS PER SQUARE
DIFFUSION DEPTH VERTICAL	2.2 MICRONS
LATERAL DIFFUSION	1.5 MICRONS
ALUMINUM SHEET RESISTIVITY	0.04 OHMS/SQUARE
ALUMINUM THICKNESS	10,000 ANG NOMINAL RANGE 8,500 TO 13,000 ANG
GATE OXIDE THICKNESS	1,400 ANG
OXIDE THICKNESS OVER N-FIELD	18,000 ANG
OXIDE THICKNESS OVER P-DIFFUSION	18,000 ANG
CAPACITANCES	
GATE	0.15 PF/SQ MIL (VGS=-1V)
METAL OVER P-REGION	0.012 PF/SQ MIL
METAL OVER N-FIELD	0.012 PF/SQ MIL
P-REGION TO SUBSTRATE	0.04 PF/SQ MIL (VPS=-1V)

TYPICAL PROCESS ELECTRICAL DEVICE CHARACTERISTICS

DEVICE CONSTANT - $B' = 2K' \approx UKE/X$ (AVERAGE)

-55 DEG C, 10.3 MICROAMPERES PER VOLT-SQUARED $V_D = -1V$, $V_{GS} = -12V$

+25 DEG C, 5.9 MICROAMPERES PER VOLT-SQUARED $V_D = -1V$, $V_{GS} = -12V$

+125 DEG C, 4.5 MICROAMPERES PER VOLT-SQUARED $V_D = -1V$, $V_{GS} = -12V$

THRESHOLD VOLTAGE CHANGE WITH SOURCE-SUBSTRATE BACK BIAS

SIZE A	CODE IDENT 13499	DWG NO. 765-4140-001
SCALE	REV	SHEET 3

074-8365-422 5-8-72

SOURCE-SUBSTRATE BACK BIAS

-1V

-4V

-16V

THRESHOLD CHANGE

-0.4V

-1.0V

-2.4V

TEMPERATURE COEFFICIENT OF THRESHOLD VOLTAGE -4.0 MV/DEG C MAX

MOS TEST DEVICE SPECIFICATIONS AND TYPICAL

CHARACTERISTICS

A TEST DEVICE IS INCORPORATED IN ALL COLLINS MOS-LSI ARRAYS.

MASK DIMENSIONS AND ELECTRICAL CHARACTERISTICS OF A TYPICAL
DEVICE ARE:

MOS TEST DEVICE

GATE WIDTH 4.6 MIL
GATE LENGTH 0.4 MIL

FIELD INVERSION TEST DEVICE

GATE WIDTH 4.8 MIL
GATE LENGTH 0.4 MIL

THRESHOLD VOLTAGE

VTH AT IDS = 10 MICROAMPERES 3.4
TO 4.4V

THRESHOLD CHANGE OVER LIFE
BVDSS (DRAIN TO SOURCE BREAKDOWN)

LESS THAN 0.5 VOLT
30 VOLTS MIN.
35 - 40 VOLTS TYPICAL AT
IDS = 10 MICROAMPERES

BVGSS (GATE OXIDE BREAKDOWN)
VTF (FIELD INVERSION VOLTAGE)

100 VOLTS MIN
32 VOLTS MIN
40 VOLTS TYPICAL AT
IDS = 10 MICROAMPERES

RON (DEVICE ON RESISTANCE)


1.0K + OR - 0.5K OHMS AT
VGS = -12V, VDS = -1V

SIZE A	CODE IDENT 13499	DWG NO. 765-4140-001
SCALE	REV	SHEET 4

074-8365-422 9-0-72

APPENDIX B

TEST PROGRAM FOR FAIRCHILD SENTRY 600 TESTER

RELEASED TO ENGINEERING RECORDS JAN 27 1976 UNDER REVISION CONTROL		REVISIONS			
		LTR	DESCRIPTION	DATE	APVD
		-	RELEASED PER DRN W-66380	2-27-76	
<p>THIS SPECIFICATION DETAILS A SENTRY TEST PROGRAM SOURCE LISTING FOR COMPREHENSIVE DEVICE TESTS ON THE SENTRY 600 MOS TESTER.</p> <p>THE DEVICE NAME IS HARRY DIAMOND LABS MOS SCALER. THE DEVICE TOP LEVEL PART NUMBER IS 765-1905-001.</p> <p>THIS SPECIFICATION SUPERCEDES 615-0552-400, (DELETED).</p>					
CONTRACT NO.		ROCKWELL INTERNATIONAL CORPORATION COLLINS RADIO GROUP DALLAS, TEX 75207 NEWPORT BEACH, CALIF 92663 CEDAR RAPIDS, IA 52406			
PREP G. THAYER <i>GT</i> 2-25-76		SENTRY 600 TEST PROGRAM FOR HARRY DIAMOND LABS MOS SCALER DEVICE			
CHK D. MULLINS <i>DM</i> 2-25-76					
APVD G. DONALDSON <i>GD</i> 2-25-76					
		SIZE	CODE IDENT	DWG NO.	
		A	13499	615-0552-401	
		SCALE		SHEET 1 OF 65	

074-8365-421- REV 2-17-75

Don

REL ☒ REV — TC — CR 0 NB 2 DL 0 TO 0

[illegible]

Page 2

615 0552 401

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000003      IF SWITCH NEQ 0 THEN GOTO VARDAT ;
000005      WRITE (TTP) ' ';
000006      WRITE (TTP) '* IS LINE PRINTER OPERATIONAL ? *';
000007      WRITE (TTP) ' ';
000010      WRITE (TTP) '* TYPE "0" IF YES. "1" IF NOT. *';
000011      READ (TTK) GLOB3;
000012      IF GLOB3 NEQ 0 THEN GOTO INF;
000014
000014      WRITE (LP) '*****';
000015      WRITE (LP) '*      HARRY DIAMOND LABS - MOS SCALAR.      *';
000016      WRITE (LP) '*PROGRAM COMPILED JULY 1 1974.      *';
000017      WRITE (LP) '*1ST UPDATE PERFORMED AUG. 2 1974.      *';
000020      WRITE (LP) '*2ND UPDATE PERFORMED SEPT. 16 1974.      *';
000021      WRITE (LP) '*3RD UPDATE PERFORMED SEPT. 4 1975.      *';
000022      WRITE (LP) '*4TH UPDATE PERFORMED NOV. 6 1975.      *';
000023      WRITE (LP) '*****';
000024
000024      INF:
000024      WRITE (TTP) '*****';
000025      WRITE (TTP) '*      REVISION 12 (PER SPECS)      *';
000026      WRITE (TTP) '*      DSN - 505524 01. SEPT. 4 1975.      *';
000027      WRITE (TTP) '*PKG CPN      765-1905-001.      *';
000030      WRITE (TTP) '*CHIP CPN      765-1874-001.      *';
000031      WRITE (TTP) '*MPAB ASSY. CPN      765-1906-001.      *';
000032      WRITE (TTP) '*PERFORMANCE BD. CPN 765-1907-001.      *';
000033      WRITE (TTP) '*DIE SIZE (101 X 59) MILS.      *';
000034      WRITE (TTP) '*NUMBER OF COMP. DIE/WAFER - 410.      *';
000035      WRITE (TTP) '*WAFER TEMP 85C. PKG T 25,75,-55.      *';
000036      WRITE (TTP) '*****';
000037
000037      INSERT COMMENCE;
000037      REM *****
000037      COMMENCE      9/4/75.
000037      ***** ;
000037
000037      RINI:
000037      WRITE (TTP) '*****';
000040      WRITE (TTP) '*----- OPERATOR NOTE -----*';
000041      WRITE (TTP) '*READ THE FOLLOWING DESCRIPTION OF TESTS*';
000042      WRITE (TTP) '*      AND THEN TYPE THE DESIRED NUMBER      *';
000043      WRITE (TTP) '*****';
000044      WRITE (TTP) ' ';
000045      WRITE (TTP) '      NAME OF TEST      TYPE NUMBER';
000046      WRITE (TTP) 'WAFER TEST (HOT)      1';
000047      WRITE (TTP) 'PACKAGE TEST AT ROOM TEMP      2';
000050      WRITE (TTP) 'PACKAGE TEST AT ROOM TEMP.      2.1';
000051      WRITE (TTP) '(STATION 3D ONLY, HANDLER)';
000052      WRITE (TTP) 'PACKAGE TEST FINAL (HOT)      2.2';
000053      WRITE (TTP) 'PACKAGE TEST FINAL (COLD)      2.3';
000054      WRITE (TTP) 'SUMMARY OF WAFER TESTING      3';
000055      WRITE (TTP) 'SUMMARY OF PACKAGE TESTING      4';
000056      WRITE (TTP) 'ENGR WAFER TEST      5';
000057      WRITE (TTP) 'ENGR PACKAGE TEST      6';
000060      WRITE (TTP) 'SCHM00 PLOTS      6.5-6.7';
000061      WRITE (TTP) 'SCOPE LOOP (WFR & PKG)      7';
000062      WRITE (TTP) 'VARIABLE DATA      8';
000063
000063      READ (TTK) SWITCH ;
000064

```

appendix b

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000064 VARDAT:
000064
000064 IF GLOB13 EQ 1 THEN BEGIN
000065 GLOB13 = 0;
000066 PAUSE 1;
000067 GOTO DEVVAR;
000070 END;
000070 IF SWITCH EQ 3 THEN GOTO WAFSMRY;
000072 IF SWITCH EQ 4 THEN GOTO PKGSMRY;
000074 IF SWITCH LT 9 THEN GOTO DEVVAR;
000076
000076 WRITE (TTP) /-----BAD TEST NUMBER, RETYPE-----/;
000077 GOTO RTN1;
000100
000100 DEVVAR:
000100 DCL BIN(71)/1B, 42B, 2B, 4B, 10B, 10B, 20B/; REM CARR. SYSTEM;
000101
000101 PRESET:
000101 FORCE RESET;
000102 FORCE VF1 0.0, RNG2;
000103 FORCE VF2 0.0, RNG2;
000104 FORCE VF3 0.0, RNG2;
000105 SET DA * (60:1);
000106 SET MA * (60:0);
000107 SET PERIOD 1E-6;
000110 ENABLE DA, MA;
000110 SET F * (60:0);
000111 ENABLE TEST;
000112
000112 REM CHECK OF CORRECT PROGRAM LOAD;
000112
000112 IF (GLOB4 AND 1B) EQ 0 THEN BEGIN
000113 ENABLE DCT1 GT VC111 + 50E-9; ENABLE DCT0 LT VC121 - 50E-9;
000115 SET PMU SENSE, AUTO; FORCE VOLTAGE 0, RNG2;
000117 ENABLE RELAY; CPMU PIN 59; DISABLE RELAY;
000122 FORCE VOLTAGE -5.0, RNG2; SET DELAY 10E-3, DC;
000124 FORCE DELAY; MEASURE VALUE;
000126 IF VALUE LT (VC111+50E-9) AND VALUE GT (VC121-50E-9) THEN
000127 GOTO ENDCHK;
000130
000130 WMSG: IF GLOB3 EQ 0 THEN BEGIN
000131 WRITE (LP) / /; WRITE (LP) / /;
000133 WRITE (LP) /* WRONG TEST PROGRAM OR PERFORMANCE BOARD. */;
000134 WRITE (LP) /??? CHECK YOUR WORK ??? /;
000135 END;
000135 IF GLOB3 EQ 1 THEN BEGIN
000136 WRITE (TTP) / /; WRITE (TTP) / /;
000140 WRITE (TTP) /* WRONG TEST PROGRAM OR PERFORMANCE BOARD. */;
000141 WRITE (TTP) / ? ? ? CHECK YOUR WORK. ? ? ? /;
000142 END;
000142 GOTO ABORT;
000143
000143 ENDCHK: SET DELAY 0, DC;
000144 GLOB4 = GLOB4 + 1B;
000145 FORCE VOLTAGE 0, RNG2; ENABLE RELAY; XPMU PIN;
000150 DISABLE RELAY; DISABLE DCT0; DISABLE DCT1;
000153 END;
000153
000153 REM DELAY GENERATED BY S600 TESTER FOR DIACON HANDLER;

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000153 IF (SWITCH EQ 2.2 OR SWITCH EQ 2.3 OR SWITCH EQ 8) AND
000154 GLOB1 EQ 0 THEN BEGIN
000154 WRITE (TTP) /* ONE MINUTE DELAY INITIATED - SMILE -.*/;
000155 DCDLY = 5.0;
000156 SET DELAY DCDLY,DC;
000157 FOR I = 1 THRU 6 DO BEGIN
000160 FORCE DELAY; FORCE WAIT;
000162 END;
000162 END; REM 1 MIN. DELAY FOR FIRST PACKGE BEFORE TEST;
000162 SET DELAY 0.0, DC;
000163 STST:
000163 IF (SWITCH GT 2 AND SWITCH LT 3) OR SWITCH EQ 8 THEN BEGIN
000164 IF GLOB1 EQ 0 THEN BEGIN
000165 WRITE (TTP) 'IS THIS A STICK TO STICK HANDLER? (YES=0, NO=1)';
000166 READ (TTK) X;
000167 IF X EQ 0 THEN BEGIN
000170 WRITE (TTP) 'HOW MANY PARTS IN A FULL STICK?';
000171 READ (TTK) X;
000172 GLOB1 = X * 100B;
000173 END; END;
000173
000173 IF (GLOB1 AND 7700B) NEQ 0 THEN BEGIN
000174 DCL BIN(71/1B, 42B, 102B, 202B, 402B, 402B, 402B);
000175
000175 IF (GLOB1 AND 7700B)/100B EQ (GLOB1 AND 77B) THEN BEGIN
000176 GLOB1 = GLOB1 AND 7700B; REM RESET COUNT TO ZERO;
000177 WRITE (TTP) /* GOOD STICK IS FULL.*/;
000200 WRITE (TTP) /* INSERT EMPTY STICK AND PUSH START BUTTON.*/;
000201 WRITE (EIR) 1740B;
000202 PAUSE 4;
000203 END;
000203
000203 IF (GLOB1 AND 770000B)/100B EQ (GLOB1 AND 7700B) THEN BEGIN
000204 GLOB1 = GLOB1 AND 7700B;
000205 WRITE (TTP) /* REJECT STICK IS FULL.*/;
000206 WRITE (TTP) /* INSERT EMPTY STICK AND PUSH START BUTTON.*/;
000207 WRITE (EIR) 37B;
000210 PAUSE 5;
000211 END; END;
000211 IF GLOB1 EQ 0 AND SWITCH EQ 8 THEN GLOB1 = GLOB1 + 1;
000213 END;
000213
000213 NOISE VOLTS,AMPS,SECS,KHZ;
000213 IF SWITCH EQ 2 OR SWITCH EQ 2.1 THEN GLOB19 = V[8];
000215 IF SWITCH EQ 2.2 THEN GLOB19 = V[9];
000217 IF SWITCH EQ 2.3 THEN GLOB19 = V[10];
000221
000221 REM VARIABLE DEFINITIONS ;
000221 V1=-27.6 VOLTS ; REM VDD (A) ;
000222 V2=-21.5 VOLTS ; REM VDD (B) ;
000223 V3=-17.0 VOLTS ; REM VDD (C) ;
000224 V4=0.0 VOLTS ; REM GND, TCOM ;
000225 V5=-8.0 VOLTS ; REM DATA, CLK LOW LEVEL;
000226 V6=-2.0 VOLTS ; REM DATA, CLK HIGH LEVEL ;
000227 V7=-8.0 VOLTS ; REM OUT LOW GP 1;
000230 V8=-2.0 VOLTS ; REM OUT HIGH GP 1;
000231 V9=-4.0 VOLTS ; REM OUT LOW GP 2;
000232 V10=-0.1 VOLTS ; REM OUT HIGH GP 2;
000233 V11=-21.4 VOLTS ; REM OUT LOW GP 3;

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000234      V12=-2.6 VOLTS ;          REM OUT HIGH GP 3;
000235      V13=-16.9 VOLTS ;         REM OUT LOW GP 4;
000236      V14=-2.0 VOLTS ;          REM OUT HIGH GP 4;
000237      V15=-16.9 VOLTS ;         REM OUT LOW GP 5;
000240      V16=-10.0 VOLTS ;        REM OUT HIGH GP 5;
000241      T1=25      KHZ ;          REM T.  FREQ. ;
000242      T2=40E-6 SECS ;           REM T.  PERIOD ;
000243      T5=13E-6 SECS ;           REM DATA DELAY, TG2;
000244      T6=20E-6 SECS ;           REM DATA WIDTH, TG2;
000245      T7=30E-6 SECS ;           REM STROBE DELAY, TG7;
000246      T8=1E-6  SECS ;           REM STROBE WIDTH, TG7;
000247
000247      IAMIN=-2E-3 AMPS;
000250      IAMAX=-10E-3 AMPS;
000251
000251      BPASS = 0;
000252
000252      FCTEST:
000252          GLOB2 = GLOB2 + 1;      REM TOTAL DEVICE COUNTER;
000253      REM CONNECTIONS AND MASK DEFINITIONS ;
000253          SET LOGIC FOS ;
000254          SET DA * 10001 01111 00101 01000 (38:0)11 ;
000255          SET DB * 11001 01111 00101 01000 (38:0)11 ; REM OPT AS INPUT;
000256          SET MB * 00000 00000 11010 (45:0) ; REM OUTS 11,12,14 ;
000257          SET MA * (60:0) ;
000260          SET S * 01(58:0);
000261          CGEN TG2 5,7,9,13,15 ;   REM DATA PINS ;
000262          CONN DPS1 8,60 ;         REM GROUND ;
000263          CONN DPS2 1,17 ;         REM VDD ;
000264
000264      REM  TEST SETUP ;
000264          FORCE VF1 0.0, RNG2 ;      REM GND ;
000265          FORCE VF2 V2, RNG3 ;       REM VDD SUPPLY ;
000266          FORCE E0 V5, RNG2 ;        REM DATA 0 ;
000267          FORCE E1 V6, RNG2 ;        REM DATA 1 ;
000270          FORCE EBO 0.0, RNG2;     REM ALT SUPPLY DATA;
000271          SET S0 V7, RNG2 ;         REM OUT REF. ZERO 1;
000272          SET S1 V8, RNG2 ;         REM OUT REF. ONE 1;
000273
000273      REM  TIMING GENERATOR CONNECTIONS AND DEFINITIONS ;
000273          SET PERIOD T2, RNG1 ;
000274          SET TG2 DELAY T5, RNG0 ;   SET TG2 WIDTH T6, RNG0 ;
000276          SET TG7 DELAY T7, RNG0 ; SET TG7 WIDTH T8, RNG0 ;
000300
000300          IF SWITCH LT 3 THEN ON FCT, CTEST ;
000302          IF SWITCH EQ 8 THEN ON FCT, VARD;
000304      NEXT0:  COMP = COMP + 1 ;      REM COUNTER FOR 5 OUTS LEVELS ;
000305
000305          AT 0 ;
000306          INSERT HDLP1 ;             REM FIRST L. M. LOAD 0-999 LOCS;
000306          REM  HDL MOS SCALER LOAD 1 'HDLP1' CREATED 6/20/74.
000306          BY H. S. GILL. ;
000306      ENABLE DA, MB ;
000306      S1@ SET F 00001 01001 00111 00000 ;
000307      SET F 00001 01000 00111 10000 ;
000310      SET F 00001 01001 00111 00000 ;
000311      SET F 00001 01000 00111 10000 ;
000312      SET F 00001 01001 00111 00000 ;
000313      SET F 00001 01000 00111 10000 ;

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000314 SET F 00001 01001 00111 00000 ,
000315 SET F 00001 01000 00111 10000 ,
000316 SET F 00001 01001 00111 00000 ,
000317 SET F 00001 01000 00111 10000 ,
000320 SET F 00001 01001 00111 00001 ,
000321 SET F 00001 01000 00111 10000 ,
000322 SET F 00001 01001 00111 00000 ,
000323 SET F 00001 01000 00111 10000 ,
000324 SET F 00001 01001 00111 00000 ,
000325 SET F 00001 01000 00111 10000 ,
000326 SET F 00001 01001 00011 00000 ,
000327 SET F 00001 01000 00011 10000 ,
000330 SET F 00001 01001 00011 00000 ,
000331 SET F 00001 01000 10011 10000 ,
000332 SET F 00001 01001 11011 00001 ,
000333 SET F 00001 01000 11011 00000 ,
000334 SET F 00001 01001 11011 10000 ,
000335 SET F 00001 01000 11011 10000 ,
000336 SET F 00001 01001 11011 00000 ,
000337 SET F 00001 01000 11011 00000 ,
000340 SET F 00001 01001 11011 10000 ,
000341 SET F 00001 01000 11011 10000 ,
000342 SET F 00001 01001 11011 00000 ,
000343 SET F 00001 01000 11011 00000 ,
000344 SET F 00001 01001 11011 10001 ,
000345 SET F 00001 01000 11011 10000 ,
000346 SET F 00001 01001 11011 00000 ,
000347 SET F 00001 01000 11011 00000 ,
000350 SET F 00001 01001 11011 10000 ,
000351 SET F 00001 01000 11011 10000 ,
000352 SET F 00001 01001 11011 00000 ,
000353 SET F 00001 01000 11011 00000 ,
000354 SET F 00001 01001 11011 10000 ,
000355 SET F 00001 01000 11011 10000 ,
000356 SET F 00001 01011 11011 00001 ,
000357 SET F 00001 01010 11011 00000 ,
000360 SET F 00001 01011 11011 10000 ,
000361 SET F 00001 01010 11011 10000 ,
000362 SET F 00001 11011 11001 10000 ,
000363 SET F 00001 11010 11001 10000 ,
000364 SET F 00001 01011 11011 10000 ,
000365 SET F 00001 01010 11011 10000 ,
000366 SET F 00001 11011 11001 10000 ,
000367 SET F 00001 11010 11001 10000 ,
000370 SET F 00001 01011 11011 10001 ,
000371 SET F 00001 01010 11011 10000 ,
000372 SET F 00001 11011 11001 10000 ,
000373 SET F 00001 11010 11001 10000 ,
000374 SET F 00001 01011 11011 10000 ,
000375 SET F 00001 01010 11011 10000 ,
000376 SET F 00001 11011 11001 10000 ,
000377 SET F 00001 11010 11001 10000 ,
000400 SET F 00001 01011 11011 10000 ,
000401 SET F 00001 01010 11011 10000 ,
000402 SET F 00000 11011 11001 10001 ,
000403 SET F 00000 01010 11001 10000 ,
000404 SET F 00000 01011 11011 10000 ,
000405 SET F 00000 01010 11011 10000 ,
000406 SET F 00000 11011 11001 10000 ,

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000407 SET F 00000 01010 11001 10000 ;
000410 SET F 00000 01011 11011 10000 ;
000411 SET F 00000 01010 11011 10000 ;
000412 SET F 00000 11011 11001 10000 ;
000413 SET F 00000 01010 11001 10000 ;
000414 SET F 00000 01011 11011 10001 ;
000415 SET F 00000 01010 11011 10000 ;
000416 SET F 00000 11011 11001 10000 ;
000417 SET F 00000 01010 11001 10000 ;
000420 SET F 00000 01011 11011 10000 ;
000421 SET F 00000 01010 11011 10000 ;
000422 SET F 00000 11011 11001 10000 ;
000423 SET F 00000 01010 11001 10000 ;
000424 SET F 00000 01011 11011 10000 ;
000425 SET F 00000 01010 11011 10000 ;
000426 SET F 00001 11011 11001 10001 ;
000427 SET F 00001 11010 11001 10000 ;
000430 SET F 00001 01011 11011 10000 ;
000431 SET F 00001 01010 11011 10000 ;
000432 SET F 00001 11011 11001 10000 ;
000433 SET F 00001 11010 11001 10000 ;
000434 SET F 00001 01011 11011 10000 ;
000435 SET F 00001 01010 11011 10000 ;
000436 SET F 00001 11011 11001 10000 ;
000437 SET F 00001 11010 11001 10000 ;
000440 SET F 00001 01011 11011 10001 ;
000441 SET F 00001 01010 11011 10000 ;
000442 SET F 00001 11011 11001 10000 ;
000443 SET F 00001 11010 11001 10000 ;
000444 SET F 00001 01011 11011 10000 ;
000445 SET F 00001 01010 11011 10000 ;
000446 SET F 00001 11011 11001 10000 ;
000447 SET F 00001 11010 11001 10000 ;
000450 SET F 00001 01011 11011 10000 ;
000451 SET F 00001 01010 11011 10000 ;
000452 SET F 00001 00011 11001 10011 ;
000453 SET F 00001 00010 11001 10000 ;
000454 SET F 00001 00011 11011 10000 ;
000455 SET F 00001 00010 11011 10000 ;
000456 SET F 00001 00011 11001 10000 ;
000457 SET F 00001 00010 11001 10000 ;
000460 SET F 00001 00011 11011 10000 ;
000461 SET F 00001 00010 11011 10000 ;
000462 SET F 00001 00011 11001 10000 ;
000463 SET F 00001 00010 11001 10000 ;
000464 SET F 00001 00011 11011 10001 ;
000465 SET F 00001 00010 11011 10000 ;
000466 SET F 00001 00011 11001 10000 ;
000467 SET F 00001 00010 11001 10000 ;
000470 SET F 00001 00011 11011 10000 ;
000471 SET F 00001 00010 11011 10000 ;
000472 SET F 00001 00011 11001 10000 ;
000473 SET F 00001 00010 11001 10000 ;
000474 SET F 00001 00011 11011 10000 ;
000475 SET F 00001 00010 11011 10000 ;
000476 SET F 00001 11011 11001 10001 ;
000477 SET F 00001 11010 11001 10000 ;
000500 SET F 00001 01011 11011 10000 ;
000501 SET F 00001 01010 11011 10000 ;

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000502 SET F 00001 11011 11001 10000 ;
000503 SET F 00001 11010 11001 10000 ;
000504 SET F 00001 01011 11011 10000 ;
000505 SET F 00001 01010 11011 10000 ;
000506 SET F 00001 11011 11001 10000 ;
000507 SET F 00001 11010 11001 10000 ;
000510 SET F 00001 01011 11011 10001 ;
000511 SET F 00001 01010 11011 10000 ;
000512 SET F 00001 11011 11001 10000 ;
000513 SET F 00001 11010 11001 10000 ;
000514 SET F 00001 01011 11011 10000 ;
000515 SET F 00001 01010 11011 10000 ;
000516 SET F 00001 11011 11001 10000 ;
000517 SET F 00001 11010 11001 10000 ;
000520 SET F 00001 01011 11011 10000 ;
000521 SET F 00001 01010 11011 10000 ;
000522 SET F 00001 11011 11001 10001 ;
000523 SET F 00001 11010 11001 10000 ;
000524 SET F 00001 01011 11011 10000 ;
000525 SET F 00001 01010 11011 10000 ;
000526 SET F 00001 11011 11001 10000 ;
000527 SET F 00001 11010 11001 10000 ;
000530 SET F 00001 01011 11011 10000 ;
000531 SET F 00001 01010 11011 10000 ;
000532 SET F 00001 11011 11001 10000 ;
000533 SET F 00001 11010 11001 10000 ;
000534 SET F 00001 01011 11011 10001 ;
000535 SET F 00001 01010 11011 10000 ;
000536 SET F 00001 11011 11001 10000 ;
000537 SET F 00001 11010 11001 10000 ;
000540 SET F 00001 01011 11011 10000 ;
000541 SET F 00001 01010 11011 10000 ;
000542 SET F 00001 11011 11001 10000 ;
000543 SET F 00001 11010 11001 10000 ;
000544 SET F 00001 01011 11011 10000 ;
000545 L1@ SET F 00001 01010 11011 10000 ;
000546 ENABLE DB,MB ;
000546 S2@ SET F 00101 01001 00111 00001 ;
000547 SET F 00101 01000 00111 10000 ;
000550 SET F 00101 01001 00111 00000 ;
000551 SET F 00101 01000 00111 10000 ;
000552 SET F 00101 01001 00111 00000 ;
000553 SET F 00101 01000 00111 10000 ;
000554 SET F 00101 01001 00111 00000 ;
000555 SET F 00101 01000 00111 10000 ;
000556 SET F 00101 01001 00111 00000 ;
000557 SET F 00101 01000 00111 10000 ;
000560 SET F 00101 01001 00111 00001 ;
000561 SET F 00101 01000 00111 10000 ;
000562 SET F 00101 01001 00111 00000 ;
000563 SET F 00101 01000 00111 10000 ;
000564 SET F 00101 01001 00111 00000 ;
000565 SET F 00101 01000 00111 10000 ;
000566 SET F 00101 01001 00111 00000 ;
000567 SET F 00101 01000 00111 10000 ;
000570 SET F 00101 01001 00111 00000 ;
000571 SET F 00101 01000 00111 10000 ;
000572 SET F 00101 01001 00111 00001 ;
000573 SET F 00101 01000 00111 10000 ;

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000574 SET F 00101 01001 00111 00000 ;
000575 SET F 00101 01000 00111 10000 ;
000576 SET F 00101 01001 00111 00000 ;
000577 SET F 00101 01000 00111 10000 ;
000600 SET F 00101 01001 00111 00000 ;
000601 SET F 00101 01000 00111 10000 ;
000602 SET F 00101 01001 00111 00000 ;
000603 SET F 00101 01000 00111 10000 ;
000604 SET F 00101 01001 00111 00001 ;
000605 SET F 00101 01000 00111 10000 ;
000606 SET F 00101 01001 00111 00000 ;
000607 SET F 00101 01000 00111 10000 ;
000610 SET F 00101 01001 00111 00000 ;
000611 SET F 00101 01000 00111 10000 ;
000612 SET F 00101 01001 00111 00000 ;
000613 SET F 00101 01000 00111 10000 ;
000614 SET F 00101 01001 00111 00000 ;
000615 SET F 00101 01000 00111 10000 ;
000616 SET F 00101 01001 00111 00011 ;
000617 SET F 00101 01000 00111 10000 ;
000620 SET F 00101 01001 00111 00000 ;
000621 SET F 00101 01000 00111 10000 ;
000622 SET F 00101 01001 00111 00000 ;
000623 SET F 00101 01000 00111 10000 ;
000624 SET F 00101 01001 00111 00000 ;
000625 SET F 00101 01000 00111 10000 ;
000626 SET F 00101 01001 00111 00000 ;
000627 SET F 00101 01000 00111 10000 ;
000630 SET F 00101 01001 00111 00001 ;
000631 SET F 00101 01000 00111 10000 ;
000632 SET F 00101 01001 00111 00000 ;
000633 SET F 00101 01000 00111 10000 ;
000634 SET F 00101 01001 00111 00000 ;
000635 SET F 00101 01000 00111 10000 ;
000636 SET F 00101 01001 00111 00000 ;
000637 SET F 00101 01000 00011 10000 ;
000640 SET F 00101 01001 00011 00000 ;
000641 SET F 00101 01000 10011 10000 ;
000642 SET F 00101 01001 11011 00001 ;
000643 SET F 00101 01000 11011 00000 ;
000644 SET F 00101 01001 11011 10000 ;
000645 SET F 00101 01000 11011 10000 ;
000646 SET F 00101 01001 11011 00000 ;
000647 SET F 00101 01000 11011 00000 ;
000650 SET F 00101 01001 11011 10000 ;
000651 SET F 00101 01000 11011 10000 ;
000652 SET F 00101 01001 11011 00000 ;
000653 SET F 00101 01000 11011 00000 ;
000654 SET F 00101 01001 11011 10001 ;
000655 SET F 00101 01000 11011 10000 ;
000656 SET F 00101 01001 11011 00000 ;
000657 SET F 00101 01000 11011 00000 ;
000660 SET F 00101 01001 11011 10000 ;
000661 SET F 00101 01000 11011 10000 ;
000662 SET F 00101 01001 11011 00000 ;
000663 SET F 00101 01000 11011 00000 ;
000664 SET F 00101 01001 11011 10000 ;
000665 SET F 00101 01000 11011 10000 ;
000666 SET F 00101 01011 11011 00001 ;

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000667 SET F 00101 01010 11011 00000 ;
000670 SET F 00101 01011 11011 10000 ;
000671 SET F 00101 01010 11011 10000 ;
000672 SET F 00101 11011 11001 10000 ;
000673 SET F 00101 11010 11001 10000 ;
000674 SET F 00101 01011 11011 10000 ;
000675 SET F 00101 01010 11011 10000 ;
000676 SET F 00101 11011 11001 10000 ;
000677 SET F 00101 11010 11001 10000 ;
000700 SET F 00101 01011 11011 10001 ;
000701 SET F 00101 01010 11011 10000 ;
000702 SET F 00101 11011 11001 10000 ;
000703 SET F 00101 11010 11001 10000 ;
000704 SET F 00101 01011 11011 10000 ;
000705 SET F 00101 01010 11011 10000 ;
000706 SET F 00101 11011 11001 10000 ;
000707 SET F 00101 11010 11001 10000 ;
000710 SET F 00101 01011 11011 10000 ;
000711 SET F 00101 01010 11011 10000 ;
000712 SET F 00100 11011 11001 10001 ;
000713 SET F 00100 01010 11001 10000 ;
000714 SET F 00100 01011 11011 10000 ;
000715 SET F 00100 01010 11011 10000 ;
000716 SET F 00100 11011 11001 10000 ;
000717 SET F 00100 01010 11001 10000 ;
000720 SET F 00100 01011 11011 10000 ;
000721 SET F 00100 01010 11011 10000 ;
000722 SET F 00100 11011 11001 10000 ;
000723 SET F 00100 01010 11001 10000 ;
000724 SET F 00100 01011 11011 10001 ;
000725 SET F 00100 01010 11011 10000 ;
000726 SET F 00100 11011 11001 10000 ;
000727 SET F 00100 01010 11001 10000 ;
000730 SET F 00100 01011 11011 10000 ;
000731 SET F 00100 01010 11011 10000 ;
000732 SET F 00100 11011 11001 10000 ;
000733 SET F 00100 01010 11001 10000 ;
000734 SET F 00100 01011 11011 10000 ;
000735 SET F 00100 01010 11011 10000 ;
000736 SET F 00101 11011 11001 10001 ;
000737 SET F 00101 11010 11001 10000 ;
000740 SET F 00101 01011 11011 10000 ;
000741 SET F 00101 01010 11011 10000 ;
000742 SET F 00101 11011 11001 10000 ;
000743 SET F 00101 11010 11001 10000 ;
000744 SET F 00101 01011 11011 10000 ;
000745 SET F 00101 01010 11011 10000 ;
000746 SET F 00101 11011 11001 10000 ;
000747 SET F 00101 11010 11001 10000 ;
000750 SET F 00101 01011 11011 10001 ;
000751 SET F 00101 01010 11011 10000 ;
000752 SET F 00101 11011 11001 10000 ;
000753 SET F 00101 11010 11001 10000 ;
000754 SET F 00101 01011 11011 10000 ;
000755 SET F 00101 01010 11011 10000 ;
000756 SET F 00101 11011 11001 10000 ;
000757 SET F 00101 11010 11001 10000 ;
000760 SET F 00101 01011 11011 10000 ;
000761 SET F 00101 01010 11011 10000 ;

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000762	SET F 00101 00011 11001 10011 ;
000763	SET F 00101 00010 11001 10000 ;
000764	SET F 00101 00011 11011 10000 ;
000765	SET F 00101 00010 11011 10000 ;
000766	SET F 00101 00011 11001 10000 ;
000767	SET F 00101 00010 11001 10000 ;
000770	SET F 00101 00011 11011 10000 ;
000771	SET F 00101 00010 11011 10000 ;
000772	SET F 00101 00011 11001 10000 ;
000773	SET F 00101 00010 11001 10000 ;
000774	SET F 00101 00011 11011 10001 ;
000775	SET F 00101 00010 11011 10000 ;
000776	SET F 00101 00011 11001 10000 ;
000777	SET F 00101 00010 11001 10000 ;
001000	SET F 00101 00011 11011 10000 ;
001001	SET F 00101 00010 11011 10000 ;
001002	SET F 00101 00011 11001 10000 ;
001003	SET F 00101 00010 11001 10000 ;
001004	SET F 00101 00011 11011 10000 ;
001005	SET F 00101 00010 11011 10000 ;
001006	SET F 00101 11011 11001 10001 ;
001007	SET F 00101 11010 11001 10000 ;
001010	SET F 00101 01011 11011 10000 ;
001011	SET F 00101 01010 11011 10000 ;
001012	SET F 00101 11011 11001 10000 ;
001013	SET F 00101 11010 11001 10000 ;
001014	SET F 00101 01011 11011 10000 ;
001015	SET F 00101 01010 11011 10000 ;
001016	SET F 00101 11011 11001 10000 ;
001017	SET F 00101 11010 11001 10000 ;
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appendix b

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appendix b

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002016	SET F	00101	11011	11001	10001	,
002017	SET F	00101	11010	11001	10000	,
002020	SET F	00101	01011	11011	10000	,
002021	SET F	00101	01010	11011	10000	,
002022	SET F	00101	11011	11001	10000	,
002023	SET F	00101	11010	11001	10000	,
002024	SET F	00101	01011	11011	10000	,
002025	SET F	00101	01010	11011	10000	,
002026	SET F	00101	11011	11001	10000	,
002027	SET F	00101	11010	11001	10000	,
002030	SET F	00101	01011	11011	10001	,
002031	SET F	00101	01010	11011	10000	,
002032	SET F	00101	11011	11001	10000	,
002033	SET F	00101	11010	11001	10000	,
002034	SET F	00101	01011	11011	10000	,
002035	SET F	00101	01010	11011	10000	,
002036	SET F	00101	11011	11001	10000	,
002037	SET F	00101	11010	11001	10000	,
002040	SET F	00101	01011	11011	10000	,
002041	SET F	00101	01010	11011	10000	,
002042	SET F	00101	11011	11001	10001	,
002043	SET F	00101	11010	11001	10000	,
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002045	SET F	00101	01010	11011	10000	,
002046	SET F	00101	11011	11001	10000	,
002047	SET F	00101	11010	11001	10000	,
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002051	SET F	00101	01010	11011	10000	,
002052	SET F	00101	11011	11001	10000	,
002053	SET F	00101	11010	11001	10000	,
002054	SET F	00101	01011	11011	10001	,
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002056	SET F	00101	11011	11001	10000	,
002057	SET F	00101	11010	11001	10000	,
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002062	SET F	00101	11011	11001	10000	,
002063	SET F	00101	11010	11001	10000	,
002064	SET F	00101	01011	11011	10000	,
002065	SET F	00101	01010	11011	10000	,
002066	SET F	00101	11011	11001	10001	,
002067	SET F	00101	11010	11001	10000	,
002070	SET F	00101	01011	11011	10000	,
002071	SET F	00101	01010	11011	10000	,
002072	SET F	00101	11011	11001	10000	,
002073	SET F	00101	11010	11001	10000	,
002074	SET F	00101	01011	11011	10000	,
002075	SET F	00101	01010	11011	10000	,
002076	SET F	00101	11011	11001	10000	,
002077	SET F	00101	11010	11001	10000	,

002100	SET F 00101 01011 11011 10001 ;
002101	SET F 00101 01010 11011 10000 ;
002102	SET F 00101 11011 11001 10000 ;
002103	SET F 00101 11010 11001 10000 ;
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002105	SET F 00101 01010 11011 10000 ;
002106	SET F 00101 11011 11001 10000 ;
002107	SET F 00101 11010 11001 10000 ;
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002111	SET F 00101 01010 11011 10000 ;
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002117	SET F 00101 11010 11001 10000 ;
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002121	SET F 00101 01010 11011 10000 ;
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002123	SET F 00101 11010 11001 10000 ;
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002125	SET F 00101 01010 11011 10000 ;
002126	SET F 00101 11011 11001 10000 ;
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002132	SET F 00101 11011 11001 10000 ;
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002136	SET F 00101 11011 11001 10001 ;
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002142	SET F 00101 11011 11001 10000 ;
002143	SET F 00101 11010 11001 10000 ;
002144	SET F 00101 01011 11011 10000 ;
002145	SET F 00101 01010 11011 10000 ;
002146	SET F 00101 11011 11001 10000 ;
002147	SET F 00101 11010 11001 10000 ;
002150	SET F 00101 01011 11011 10001 ;
002151	SET F 00101 01010 11011 10000 ;
002152	SET F 00101 11011 11001 10000 ;
002153	SET F 00101 11010 11001 10000 ;
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002155	SET F 00101 01010 11011 10000 ;
002156	SET F 00101 11011 11001 10000 ;
002157	SET F 00101 11010 11001 10000 ;
002160	SET F 00101 01011 11011 10000 ;
002161	SET F 00101 01010 11011 10000 ;
002162	SET F 00101 11011 11001 10001 ;
002163	SET F 00101 11010 11001 10000 ;
002164	SET F 00101 01011 11011 10000 ;
002165	SET F 00101 01010 11011 10000 ;
002166	SET F 00101 11011 11001 10000 ;
002167	SET F 00101 11010 11001 10000 ;
002170	SET F 00101 01011 11011 10000 ;
002171	SET F 00101 01010 11011 10000 ;
002172	SET F 00101 11011 11001 10000 ;

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002173 SET F 00101 11010 11001 10000 ;
002174 SET F 00101 01011 11011 10001 ;
002175 SET F 00101 01010 11011 10000 ;
002176 SET F 00101 11011 11001 10000 ;
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002204 SET F 00101 01011 11011 10000 ;
002205 SET F 00101 01010 11011 10000 ;
002206 SET F 00101 11011 11001 10001 ;
002207 SET F 00101 11010 11001 10000 ;
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002211 SET F 00101 01010 11011 10000 ;
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002217 SET F 00101 11010 11001 10000 ;
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002223 SET F 00101 11010 11001 10000 ;
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002225 SET F 00101 01010 11011 10000 ;
002226 SET F 00101 11011 11001 10000 ;
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002231 SET F 00101 01010 11011 10000 ;
002232 SET F 00101 11011 11001 10001 ;
002233 SET F 00101 11010 11001 10000 ;
002234 SET F 00101 01011 11011 10000 ;
002235 SET F 00101 01010 11011 10000 ;
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002244 SET F 00101 01011 11011 10001 ;
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002250 SET F 00101 01011 11011 10000 ;
002251 SET F 00101 01010 11011 10000 ;
002252 SET F 00101 11011 11001 10000 ;
002253 SET F 00101 11010 11001 10000 ;
002254 SET F 00101 01011 11011 10000 ;
002255 L2 @ SET F 00101 01010 11011 10000 ;
002256
002256 IF SWITCH EQ 7 THEN GOTO LOOP ;
002260 SET START 0 ;
002261 SET MAJOR 1, L1 ;
002262 SET MINOR 1, S1, L1 ;
002263 ENABLE TEST ; REM 1, VDD = B ;
002264
002264 FORCE VF2 V1, RNG3 ; REM VDD = A;

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appendix b

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002265      SET START 160 ;
002266      SET MAJOR 1, L2 ;
002267      SET MINOR 1, S2, L2 ;
002270      ENABLE TEST ;
002271
002271      AT 0 ;
002272      INSERT HDLP2 ;
002272      REM HDL MOS SCALER PATTERN LOAD 2 'HDLP2' 6/20/74.
002272      REM SECOND L. M. LOAD 1000-1999 ;
002272      CREATED BY H. S. GILL ;
002272      ENABLE DB, MB ;
002272      S3@ SET F 00101 11011 11001 10000 ;
002273      SET F 00101 11010 11001 10000 ;
002274      SET F 00101 01011 11011 10000 ;
002275      SET F 00101 01010 11011 10000 ;
002276      SET F 00101 11011 11001 10000 ;
002277      SET F 00101 11010 11001 10000 ;
002300      SET F 00101 01011 11011 10000 ;
002301      SET F 00101 01010 11011 10000 ;
002302      SET F 00101 11011 11001 10000 ;
002303      SET F 00101 11010 11001 10000 ;
002304      SET F 00101 01011 11011 10001 ;
002305      SET F 00101 01010 11011 10000 ;
002306      SET F 00101 11011 11001 10000 ;
002307      SET F 00101 11010 11001 10000 ;
002310      SET F 00101 01011 11011 10000 ;
002311      SET F 00101 01010 11011 10000 ;
002312      SET F 00101 11011 11001 10000 ;
002313      SET F 00101 11010 11001 10000 ;
002314      SET F 00101 01011 11011 10000 ;
002315      SET F 00101 01010 11011 10000 ;
002316      SET F 00101 11011 11001 10001 ;
002317      SET F 00101 11010 11001 10000 ;
002320      SET F 00101 01011 11011 10000 ;
002321      SET F 00101 01010 11011 10000 ;
002322      SET F 00101 11011 11001 10000 ;
002323      SET F 00101 11010 11001 10000 ;
002324      SET F 00101 01011 11011 10000 ;
002325      SET F 00101 01010 11011 10000 ;
002326      SET F 00101 11011 11001 10000 ;
002327      SET F 00101 11010 11001 10000 ;
002330      SET F 00101 01011 11011 10001 ;
002331      SET F 00101 01010 11011 10000 ;
002332      SET F 00101 11011 11001 10000 ;
002333      SET F 00101 11010 11001 10000 ;
002334      SET F 00101 01011 11011 10000 ;
002335      SET F 00101 01010 11011 10000 ;
002336      SET F 00101 11011 11001 10000 ;
002337      SET F 00101 11010 11001 10000 ;
002340      SET F 00101 01011 11011 10000 ;
002341      SET F 00101 01010 11011 10000 ;
002342      SET F 00101 11011 11001 10001 ;
002343      SET F 00101 11010 11001 10000 ;
002344      SET F 00101 01011 11011 10000 ;
002345      SET F 00101 01010 11011 10000 ;
002346      SET F 00101 11011 11001 10000 ;
002347      SET F 00101 11010 11001 10000 ;
002350      SET F 00101 01011 11011 10000 ;
002351      SET F 00101 01010 11011 10000 ;
002352      SET F 00101 11011 11001 10000 ;
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002353 SET F 00101 11010 11001 10000 ;
002354 SET F 00101 01011 11011 10001 ;
002355 SET F 00101 01010 11011 10000 ;
002356 SET F 00101 11011 11001 10000 ;
002357 SET F 00101 11010 11001 10000 ;
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002361 SET F 00101 01010 11011 10000 ;
002362 SET F 00101 11011 11001 10000 ;
002363 SET F 00101 11010 11001 10000 ;
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002365 SET F 00101 01010 11011 10000 ;
002366 SET F 00101 11011 11001 10001 ;
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002372 SET F 00101 11011 11001 10000 ;
002373 SET F 00101 11010 11001 10000 ;
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002377 SET F 00101 11010 11001 10000 ;
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002443 SET F 00101 11010 11001 10000 ;
002444 SET F 00101 01011 11011 10000 ;
002445 SET F 00101 01010 11011 10000 ;

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appendix b

002446	SET F 00101 11011 11001 10000 ;
002447	SET F 00101 11010 11001 10000 ;
002450	SET F 00101 01011 11011 10001 ;
002451	SET F 00101 01010 11011 10000 ;
002452	SET F 00101 11011 11001 10000 ;
002453	SET F 00101 11010 11001 10000 ;
002454	SET F 00101 01011 11011 10000 ;
002455	SET F 00101 01010 11011 10000 ;
002456	SET F 00101 11011 11001 10000 ;
002457	SET F 00101 11010 11001 10000 ;
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002461	SET F 00101 01010 11011 10000 ;
002462	SET F 00101 11011 11001 10001 ;
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002473	SET F 00101 11010 11001 10000 ;
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002476	SET F 00101 11011 11001 10000 ;
002477	SET F 00101 11010 11001 10000 ;
002500	SET F 00101 01011 11011 10000 ;
002501	SET F 00101 01010 11011 10000 ;
002502	SET F 00101 11011 11001 10000 ;
002503	SET F 00101 11010 11001 10000 ;
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002505	SET F 00101 01010 11011 10000 ;
002506	SET F 00101 11011 11001 10001 ;
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002512	SET F 00101 11011 11001 10000 ;
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002515	SET F 00101 01010 11011 10000 ;
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002517	SET F 00101 11010 11001 10000 ;
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002540	SET F 00101 01011 11011 10000 ;

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002633 SET F 00101 11010 11001 10000 ;

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002637	SET F 00101 11010 11001 10000 ;
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002645	SET F 00101 01010 11011 10000 ;
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002720	SET F 00101 01011 11011 10000 ;
002721	SET F 00101 01010 11011 10000 ;
002722	SET F 00101 11011 11001 10001 ;
002723	SET F 00101 01010 11001 10000 ;
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002725	SET F 00101 01010 11011 10000 ;
002726	SET F 00101 11011 11001 10000 ;


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002727 SET F 00101 01010 11001 10000 ;
002730 SET F 00101 01011 11011 10000 ;
002731 L3 @ SET F 00101 01010 11011 10000 ;
002732 S4@ SET F 00101 11011 11001 10000 ;
002733 SET F 00101 01010 11001 10000 ;
002734 SET F 00101 01011 11011 10001 ;
002735 SET F 00101 01010 11011 10000 ;
002736 SET F 00101 11011 11001 10000 ;
002737 SET F 00101 01010 11001 10000 ;
002740 SET F 00101 01011 11011 10000 ;
002741 SET F 00101 01010 11011 10000 ;
002742 SET F 00101 11011 11001 10000 ;
002743 SET F 00101 01010 11001 10000 ;
002744 SET F 00101 01011 11011 10000 ;
002745 L4@ SET F 00101 01010 11011 10000 ;
002746 ENABLE DA,MB ;
002746 S5@ SET F 00101 00001 00110 00011 ;
002747 SET F 00101 00000 00110 00000 ;
002750 SET F 00101 00001 00110 00000 ;
002751 SET F 00101 00000 00110 00000 ;
002752 SET F 00101 00001 00110 00000 ;
002753 SET F 00101 00000 00110 00000 ;
002754 SET F 00101 00001 00110 00000 ;
002755 SET F 00101 00000 00110 00000 ;
002756 SET F 00101 00001 00110 00000 ;
002757 SET F 00101 00000 00110 00000 ;
002760 SET F 00101 00001 00110 00001 ;
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002762 SET F 00101 00001 00110 00000 ;
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003077	SET F 00101 00010 11000 00000 ;
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003113	SET F 00000 00000 11000 00000 ;

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003300	SET F 00011 01001 11000 00000 ;
003301	SET F 00011 01000 11000 00000 ;


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003374 SET F 00011 00001 11000 00000 ,

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appendix b

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003433	SET F 00011 00000 11000 00000 ;
003434	SET F 00011 00001 11000 00001 ;
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003743 SET F 00011 00000 11000 00000 ;
003744 SET F 00011 00001 11000 00001 ;
003745 SET F 00011 00000 11000 00000 ;
003746 SET F 00011 00001 11000 00000 ;
003747 SET F 00011 00000 11000 00000 ;
003750 SET F 00011 00001 11000 00000 ;

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appendix b

003751	SET F 00011 00000 11000 00000 ;
003752	SET F 00011 00001 11000 00000 ;
003753	SET F 00011 00000 11000 00000 ;
003754	SET F 00011 00001 11000 00000 ;
003755	SET F 00011 00000 11000 00000 ;
003756	SET F 00011 00001 11000 00001 ;
003757	SET F 00011 00000 11000 00000 ;
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003761	SET F 00011 00000 11000 00000 ;
003762	SET F 00011 00001 11000 00000 ;
003763	SET F 00011 00000 11000 00000 ;
003764	SET F 00011 00001 11000 00000 ;
003765	SET F 00011 00000 11000 00000 ;
003766	SET F 00011 00001 11000 00000 ;
003767	SET F 00011 00000 11000 00000 ;
003770	SET F 00011 00001 11000 00001 ;
003771	SET F 00011 00000 11000 00000 ;
003772	SET F 00011 00001 11000 00000 ;
003773	SET F 00011 00000 11000 00000 ;
003774	SET F 00011 00001 11000 00000 ;
003775	SET F 00011 00000 11000 00000 ;
003776	SET F 00011 00001 11000 00000 ;
003777	SET F 00011 00000 11000 00000 ;
004000	SET F 00011 00001 11000 00000 ;
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004002	SET F 00011 00001 11000 00001 ;
004003	SET F 00011 00000 11000 00000 ;
004004	SET F 00011 00001 11000 00000 ;
004005	SET F 00011 00000 11000 00000 ;
004006	SET F 00011 00001 11000 00000 ;
004007	SET F 00011 00000 11000 00000 ;
004010	SET F 00011 00001 11000 00000 ;
004011	SET F 00011 00000 11000 00000 ;
004012	SET F 00011 00001 11000 00000 ;
004013	SET F 00011 00000 11000 00000 ;
004014	SET F 00011 00001 11000 00001 ;
004015	SET F 00011 00000 11000 00000 ;
004016	SET F 00011 00001 11000 00000 ;
004017	SET F 00011 00000 11000 00000 ;
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004024	SET F 00011 00001 11000 00000 ;
004025	SET F 00011 00000 11000 00000 ;
004026	SET F 00011 00001 11000 00001 ;
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004036	SET F 00011 00001 11000 00000 ;
004037	SET F 00011 00000 11000 00000 ;
004040	SET F 00011 00001 11000 00001 ;
004041	SET F 00011 00000 11000 00000 ;
004042	SET F 00011 00001 11000 00000 ;
004043	SET F 00011 00000 11000 00000 ;

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004051 SET F 00011 00000 11000 00000 ;
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004133 SET F 00011 00000 11000 00000 ;
004134 SET F 00011 00001 11000 00001 ;
004135 SET F 00011 00000 11000 00000 ;
004136 SET F 00011 00001 11000 00000 ;

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appendix b

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004143	SET F 00011 00000 11000 00000 ;
004144	SET F 00011 00001 11000 00000 ;
004145	SET F 00011 00000 11000 00000 ;
004146	SET F 00011 00001 11000 00001 ;
004147	SET F 00011 00000 11000 00000 ;
004150	SET F 00011 00001 11000 00000 ;
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004152	SET F 00011 00001 11000 00000 ;
004153	SET F 00011 00000 11000 00000 ;
004154	SET F 00011 00001 11000 00000 ;
004155	SET F 00011 00000 11000 00000 ;
004156	SET F 00011 00001 11000 00000 ;
004157	SET F 00011 00000 11000 00000 ;
004160	SET F 00011 00001 11000 00001 ;
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004164	SET F 00011 00001 11000 00000 ;
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004172	SET F 00011 00001 11000 00001 ;
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004174	SET F 00011 00001 11000 00000 ;
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004176	SET F 00011 00001 11000 00000 ;
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004203	SET F 00011 00000 11000 00000 ;
004204	SET F 00011 00001 11000 00001 ;
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004210	SET F 00011 00001 11000 00000 ;
004211	SET F 00011 00000 11000 00000 ;
004212	SET F 00011 00001 11000 00000 ;
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004216	SET F 00011 00001 11000 00001 ;
004217	SET F 00011 00000 11000 00000 ;
004220	SET F 00011 00001 11000 00000 ;
004221	SET F 00011 00000 11000 00000 ;
004222	SET F 00011 00001 11000 00000 ;
004223	SET F 00011 00000 11000 00000 ;
004224	SET F 00011 00001 11000 00000 ;
004225	SET F 00011 00000 11000 00000 ;
004226	SET F 00011 00001 11000 00000 ;
004227	SET F 00011 00000 11000 00000 ;
004230	SET F 00011 00001 11000 00001 ;
004231	SET F 00011 00000 11000 00000 ;


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004232 SET F 00011 00001 11000 00000 ;
004233 SET F 00011 00000 11000 00000 ;
004234 SET F 00011 00001 11000 00000 ;
004235 SET F 00011 00000 11000 00000 ;
004236 SET F 00011 00001 11000 00000 ;
004237 SET F 00011 00000 11000 00000 ;
004240 SET F 00011 00001 11000 00000 ;
004241 L5@ SET F 00011 00000 11000 00000 ;
004242
004242 IF SWITCH EQ 7 1 THEN GOTO LOOP ;
004244
004244 SET START 0 ;
004245 SET MAJOR 1, L3 ;
004246 SET MINOR 1, S3, L3 ;
004247 ENABLE TEST ; REM 3, VDD = A ;
004250
004250 FORCE VF2 V2, RNG3 ; REM VDD = B ;
004251 SET START 288 ;
004252 SET MAJOR 1, L4 ;
004253 SET MINOR 1, S4, L4 ;
004254 ENABLE TEST ; REM 4, VDD = B ;
004255
004255 IF OUT EQ 6 OR OUT EQ 16 THEN GOTO SKIP ;
004257 FORCE VF2 V3, RNG3 ; REM VDD = C ;
004260 SET START 300 ;
004261 SET MAJOR 1, L5 ;
004262 SET MINOR 1, S5, L5 ;
004263 ENABLE TEST ; REM 5, VDD = C ;
004264
004264 AT 0 ;
004265 INSERT HDLP3 ; REM THIRD L.M. LOAD 2000-2600 ;
004265 REM HDL MOS SCALER PATTERN FOR LOAD 3 'HDLP3' 6/21/74.
004265 CREATED BY H. S. GILL.
004265 S6@ SET F 00011 00001 11000 00000 ;
004266 SET F 00011 00000 11000 00000 ;
004267 SET F 00011 00001 11000 00000 ;
004270 SET F 00011 00000 11000 00000 ;
004271 SET F 00011 00001 11000 00000 ;
004272 SET F 00011 00000 11000 00000 ;
004273 SET F 00011 00001 11000 00000 ;
004274 SET F 00011 00000 11000 00000 ;
004275 SET F 00011 00001 11000 00000 ;
004276 SET F 00011 00000 11000 00000 ;
004277 SET F 00011 00001 11000 00001 ;
004300 SET F 00011 00000 11000 00000 ;
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004303 SET F 00011 00001 11000 00000 ;
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004306 SET F 00011 00000 11000 00000 ;
004307 SET F 00011 00001 11000 00000 ;
004310 SET F 00011 00000 11000 00000 ;
004311 SET F 00011 00001 11000 00001 ;
004312 SET F 00011 00000 11000 00000 ;
004313 SET F 00011 00001 11000 00000 ;
004314 SET F 00011 00000 11000 00000 ;
004315 SET F 00011 00001 11000 00000 ;
004316 SET F 00011 00000 11000 00000 ;

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appendix b

004317	SET F 00011 00001 11000 00000 ;
004320	SET F 00011 00000 11000 00000 ;
004321	SET F 00011 00001 11000 00000 ;
004322	SET F 00011 00000 11000 00000 ;
004323	SET F 00011 00001 11000 00001 ;
004324	SET F 00011 00000 11000 00000 ;
004325	SET F 00011 00001 11000 00000 ;
004326	SET F 00011 00000 11000 00000 ;
004327	SET F 00011 00001 11000 00000 ;
004330	SET F 00011 00000 11000 00000 ;
004331	SET F 00011 00001 11000 00000 ;
004332	SET F 00011 00000 11000 00000 ;
004333	SET F 00011 00001 11000 00000 ;
004334	SET F 00011 00000 11000 00000 ;
004335	SET F 00011 00001 11000 00001 ;
004336	SET F 00011 00000 11000 00000 ;
004337	SET F 00011 00001 11000 00000 ;
004340	SET F 00011 00000 11000 00000 ;
004341	SET F 00011 00001 11000 00000 ;
004342	SET F 00011 00000 11000 00000 ;
004343	SET F 00011 00001 11000 00000 ;
004344	SET F 00011 00000 11000 00000 ;
004345	SET F 00011 00001 11000 00000 ;
004346	SET F 00011 00000 11000 00000 ;
004347	SET F 00011 00001 11000 00001 ;
004350	SET F 00011 00000 11000 00000 ;
004351	SET F 00011 00001 11000 00000 ;
004352	SET F 00011 00000 11000 00000 ;
004353	SET F 00011 00001 11000 00000 ;
004354	SET F 00011 00000 11000 00000 ;
004355	SET F 00011 00001 11000 00000 ;
004356	SET F 00011 00000 11000 00000 ;
004357	SET F 00011 00001 11000 00000 ;
004360	SET F 00011 00000 11000 00000 ;
004361	SET F 00011 00001 11000 00001 ;
004362	SET F 00011 00000 11000 00000 ;
004363	SET F 00011 00001 11000 00000 ;
004364	SET F 00011 00000 11000 00000 ;
004365	SET F 00011 00001 11000 00000 ;
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004371	SET F 00011 00001 11000 00000 ;
004372	SET F 00011 00000 11000 00000 ;
004373	SET F 00011 00001 11000 00001 ;
004374	SET F 00011 00000 11000 00000 ;
004375	SET F 00011 00001 11000 00000 ;
004376	SET F 00011 00000 11000 00000 ;
004377	SET F 00011 00001 11000 00000 ;
004400	SET F 00011 00000 11000 00000 ;
004401	SET F 00011 00001 11000 00000 ;
004402	SET F 00011 00000 11000 00000 ;
004403	SET F 00011 00001 11000 00000 ;
004404	SET F 00011 00000 11000 00000 ;
004405	SET F 00011 00001 11000 00001 ;
004406	SET F 00011 00000 11000 00000 ;
004407	SET F 00011 00001 11000 00000 ;
004410	SET F 00011 00000 11000 00000 ;
004411	SET F 00011 00001 11000 00000 ;

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004503 SET F 00011 00001 11000 00000 ;
004504 SET F 00011 00000 11000 00000 ;

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004631 SET F 00011 00001 11000 00000 ;
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004711 SET F 00011 00001 11000 00000 ;
004712 SET F 00011 00000 11000 00000 ;
004713 SET F 00011 00001 11000 00000 ;
004714 SET F 00011 00000 11000 00000 ;
004715 SET F 00011 00001 11000 00001 ;
004716 SET F 00011 00000 11000 00000 ;
004717 SET F 00011 00001 11000 00000 ;
004720 SET F 00011 00000 11000 00000 ;
004721 SET F 00011 00001 11000 00000 ;
004722 SET F 00011 00000 11000 00000 ;
004723 SET F 00011 00001 11000 00000 ;
004724 SET F 00011 00000 11000 00000 ;
004725 SET F 00011 00001 11000 00000 ;
004726 SET F 00011 00000 11000 00000 ;
004727 SET F 00011 00001 11000 00001 ;
004730 SET F 00011 00000 11000 00000 ;
004731 SET F 00011 00001 11000 00000 ;
004732 SET F 00011 00000 11000 00000 ;
004733 SET F 00011 00001 11000 00000 ;
004734 SET F 00011 00000 11000 00000 ;
004735 SET F 00011 00001 11000 00000 ;
004736 SET F 00011 00000 11000 00000 ;
004737 SET F 00011 00001 11000 00000 ;
004740 SET F 00011 00000 11000 00000 ;
004741 SET F 00011 00001 11000 00011 ;
004742 SET F 00011 00000 11000 00000 ;
004743 SET F 00011 00001 11000 00000 ;
004744 SET F 00011 00000 11000 00000 ;
004745 SET F 00011 00001 11000 00000 ;
004746 SET F 00011 00000 11000 00000 ;
004747 SET F 00011 00001 11000 00000 ;
004750 SET F 00011 00000 11000 00000 ;
004751 SET F 00011 00001 11000 00000 ;
004752 SET F 00011 00000 11000 00000 ;
004753 SET F 00011 00001 11000 00001 ;
004754 SET F 00011 00000 11000 00000 ;
004755 SET F 00011 00001 11000 00000 ;
004756 SET F 00011 00000 11000 00000 ;
004757 SET F 00011 00001 11000 00000 ;
004760 SET F 00011 00000 11000 00000 ;
004761 SET F 00011 00001 11000 00000 ;
004762 SET F 00011 00000 11000 00000 ;
004763 SET F 00011 00001 11000 00000 ;
004764 SET F 00011 00000 11000 00000 ;
004765 SET F 00011 00001 11000 00001 ;

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004766 SET F 00011 00000 11000 00000 ;
004767 SET F 00011 00001 11000 00000 ;
004770 SET F 00011 00000 11000 00000 ;
004771 SET F 00011 00001 11000 00000 ;
004772 SET F 00011 00000 11000 00000 ;
004773 SET F 00011 00001 11000 00000 ;
004774 SET F 00011 00000 11000 00000 ;
004775 SET F 00011 00001 11000 00000 ;
004776 SET F 00011 00000 11000 00000 ;
004777 SET F 00011 00001 11000 00001 ;
005000 SET F 00011 00000 11000 00000 ;
005001 SET F 00011 00001 11000 00000 ;
005002 SET F 00011 00000 11000 00000 ;
005003 SET F 00011 00001 11000 00000 ;
005004 SET F 00011 00000 11000 00000 ;
005005 SET F 00011 00001 11000 00000 ;
005006 SET F 00011 00000 11000 00000 ;
005007 SET F 00011 00001 11000 00000 ;
005010 SET F 00011 00000 11000 00000 ;
005011 SET F 00011 00001 11000 00001 ;
005012 SET F 00011 00000 11000 00000 ;
005013 SET F 00011 00001 11000 00000 ;
005014 SET F 00011 00000 11000 00000 ;
005015 SET F 00011 00001 11010 00000 ;
005016 SET F 00011 00000 11010 00000 ;
005017 SET F 00011 00001 11010 00000 ;
005020 SET F 00011 00000 11010 00000 ;
005021 SET F 00011 00001 11010 00000 ;
005022 SET F 00011 00000 11010 00000 ;
005023 SET F 00011 00001 11010 00001 ;
005024 SET F 00011 00000 11010 00000 ;
005025 SET F 00011 00001 11010 00000 ;
005026 SET F 00011 00000 11010 00000 ;
005027 SET F 00011 00001 11010 00000 ;
005030 SET F 00011 00000 11010 00000 ;
005031 SET F 00011 00001 11010 00000 ;
005032 SET F 00011 00000 11010 00000 ;
005033 SET F 00011 00001 11010 00000 ;
005034 SET F 00011 00000 11010 00000 ;
005035 SET F 00011 00001 11010 00001 ;
005036 SET F 00011 00000 11010 00000 ;
005037 SET F 00011 00001 11010 00000 ;
005040 SET F 00011 00000 11010 00000 ;
005041 SET F 00011 00001 11010 00000 ;
005042 SET F 00011 00000 11010 00000 ;
005043 SET F 00011 00001 11010 00000 ;
005044 SET F 00011 00000 11010 00000 ;
005045 SET F 00011 00001 11010 00000 ;
005046 SET F 00011 00000 11010 00000 ;
005047 SET F 00011 00001 11010 00001 ;
005050 SET F 00011 00000 11010 00000 ;
005051 SET F 00011 00001 11010 00000 ;
005052 SET F 00011 00000 11010 00000 ;
005053 SET F 00011 00001 11010 00000 ;
005054 SET F 00011 00000 11010 00000 ;
005055 SET F 00011 00001 11010 00000 ;
005056 SET F 00011 00000 11010 00000 ;
005057 SET F 00011 00001 11010 00000 ;
005060 L6@ SET F 00011 00000 11010 00000 ;

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005061  ENABLE DB,MB ;
005061  S7@ SET F 00101 00001 00110 00001 ;
005062  SET F 00101 00000 00110 00000 ;
005063  SET F 00101 00001 00110 00000 ;
005064  SET F 00101 00000 00110 00000 ;
005065  SET F 00101 00001 00110 00000 ;
005066  SET F 00101 00000 00110 00000 ;
005067  SET F 00101 00001 00110 00000 ;
005070  SET F 00101 00000 00110 00000 ;
005071  SET F 00101 00001 00110 00000 ;
005072  SET F 00101 00000 00110 00000 ;
005073  SET F 00101 00001 00110 00001 ;
005074  SET F 00101 00000 00110 00000 ;
005075  SET F 00101 00001 00110 00000 ;
005076  SET F 00101 00000 00110 00000 ;
005077  SET F 00101 00001 00110 00000 ;
005100  SET F 00101 00000 00110 00000 ;
005101  SET F 00101 00001 00010 00000 ;
005102  SET F 00101 00000 00010 00000 ;
005103  SET F 00101 00001 00010 00000 ;
005104  SET F 00101 00000 10010 00000 ;
005105  SET F 00101 00001 11000 00011 ;
005106  SET F 00101 00000 11000 00000 ;
005107  SET F 00101 00001 11000 00000 ;
005110  SET F 00101 00000 11000 00000 ;
005111  SET F 00101 00001 11000 00000 ;
005112  SET F 00101 00000 11000 00000 ;
005113  SET F 00101 00001 11000 00000 ;
005114  SET F 00101 00000 11000 00000 ;
005115  SET F 00101 00001 11000 00000 ;
005116  SET F 00101 00000 11000 00000 ;
005117  SET F 00101 00001 11000 00001 ;
005120  SET F 00101 00000 11000 00000 ;
005121  SET F 00101 00001 11000 00000 ;
005122  SET F 00101 00000 11000 00000 ;
005123  SET F 00101 00001 11000 00000 ;
005124  SET F 00101 00000 11000 00000 ;
005125  SET F 00101 00001 11000 00000 ;
005126  SET F 00101 00000 11000 00000 ;
005127  SET F 00101 00001 11000 00000 ;
005130  SET F 00101 00000 11000 00000 ;
005131  SET F 00101 00011 11000 00001 ;
005132  SET F 00101 00010 11000 00000 ;
005133  SET F 00101 00011 11000 00000 ;
005134  SET F 00101 00010 11000 00000 ;
005135  SET F 00101 00011 11000 00000 ;
005136  SET F 00101 00010 11000 00000 ;
005137  SET F 00101 00011 11000 00000 ;
005140  SET F 00101 00010 11000 00000 ;
005141  SET F 00101 00011 11000 00000 ;
005142  SET F 00101 00010 11000 00000 ;
005143  SET F 00101 00011 11000 00001 ;
005144  SET F 00101 00010 11000 00000 ;
005145  SET F 00101 00011 11000 00000 ;
005146  SET F 00101 00010 11000 00000 ;
005147  SET F 00101 00011 11000 00000 ;
005150  SET F 00101 00010 11000 00000 ;
005151  SET F 00101 00011 11000 00000 ;
005152  SET F 00101 00010 11000 00000 ;

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005153 SET F 00101 00011 11000 00000 ;
005154 SET F 00101 00010 11000 00000 ;
005155 SET F 00101 00001 11000 00001 ;
005156 SET F 00101 00000 11000 00000 ;
005157 SET F 00101 00001 11000 00000 ;
005160 SET F 00101 00000 11000 00000 ;
005161 SET F 00101 00001 11000 00000 ;
005162 SET F 00101 00000 11000 00000 ;
005163 SET F 00101 00001 11000 00000 ;
005164 SET F 00101 00000 11000 00000 ;
005165 SET F 00101 00001 11000 00000 ;
005166 SET F 00101 00000 11000 00000 ;
005167 SET F 00101 00001 11000 00001 ;
005170 SET F 00101 00000 11000 00000 ;
005171 SET F 00101 00001 11000 00000 ;
005172 SET F 00101 00000 11000 00000 ;
005173 SET F 00101 00001 11000 00000 ;
005174 SET F 00101 00000 11000 00000 ;
005175 SET F 00101 00001 11000 00000 ;
005176 SET F 00101 00000 11000 00000 ;
005177 SET F 00101 00001 11000 00000 ;
005200 SET F 00101 00000 11000 00000 ;
005201 SET F 00000 00001 11000 00001 ;
005202 SET F 00000 00000 11000 00000 ;
005203 SET F 00000 00001 11000 00000 ;
005204 SET F 00000 00000 11000 00000 ;
005205 SET F 00000 00001 11000 00000 ;
005206 SET F 00000 00000 11000 00000 ;
005207 SET F 00000 00001 11000 00000 ;
005210 SET F 00000 00000 11000 00000 ;
005211 SET F 00000 00001 11000 00000 ;
005212 SET F 00000 00000 11000 00000 ;
005213 SET F 00000 00001 11000 00001 ;
005214 SET F 00000 00000 11000 00000 ;
005215 SET F 00000 00001 11000 00000 ;
005216 SET F 00000 00000 11000 00000 ;
005217 SET F 00000 00001 11000 00000 ;
005220 SET F 00000 00000 11000 00000 ;
005221 SET F 00000 00001 11000 00000 ;
005222 SET F 00000 00000 11000 00000 ;
005223 SET F 00000 00001 11000 00000 ;
005224 SET F 00000 00000 11000 00000 ;
005225 SET F 00001 00001 11000 00001 ;
005226 SET F 00001 00000 11000 00000 ;
005227 SET F 00001 00001 11000 00000 ;
005230 SET F 00001 00000 11000 00000 ;
005231 SET F 00001 00001 11000 00000 ;
005232 SET F 00001 00000 11000 00000 ;
005233 SET F 00001 00001 11000 00000 ;
005234 SET F 00001 00000 11000 00000 ;
005235 SET F 00001 00001 11000 00000 ;
005236 SET F 00001 00000 11000 00000 ;
005237 SET F 00001 00001 11000 00001 ;
005240 SET F 00001 00000 11000 00000 ;
005241 SET F 00001 00001 11000 00000 ;
005242 SET F 00001 00000 11000 00000 ;
005243 SET F 00001 00001 11000 00000 ;
005244 SET F 00001 00000 11000 00000 ;
005245 SET F 00001 00001 11000 00000 ;

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615 0552 401

005246	SET F 00001 00000 11000 00000 ,
005247	SET F 00001 00001 11000 00000 ,
005250	SET F 00001 00000 11000 00000 ,
005251	SET F 00001 00001 11000 00011 ,
005252	SET F 00001 00000 11000 00000 ,
005253	SET F 00001 00001 11000 00000 ,
005254	SET F 00001 00000 11000 00000 ,
005255	SET F 00001 00001 11000 00000 ,
005256	SET F 00001 00000 11000 00000 ,
005257	SET F 00001 00001 11000 00000 ,
005260	SET F 00001 00000 11000 00000 ,
005261	SET F 00001 00001 11000 00000 ,
005262	SET F 00001 00000 11000 00000 ,
005263	SET F 00001 00001 11000 00001 ,
005264	SET F 00001 00000 11000 00000 ,
005265	SET F 00001 00001 11000 00000 ,
005266	SET F 00001 00000 11000 00000 ,
005267	SET F 00001 00001 11000 00000 ,
005270	SET F 00001 00000 11000 00000 ,
005271	SET F 00001 00001 11000 00000 ,
005272	SET F 00001 00000 11000 00000 ,
005273	SET F 00001 00001 11000 00000 ,
005274	SET F 00001 00000 11000 00000 ,
005275	SET F 00011 01001 11000 00001 ,
005276	SET F 00011 01000 11000 00000 ,
005277	SET F 00011 01001 11000 00000 ,
005300	SET F 00011 01000 11000 00000 ,
005301	SET F 00011 01001 11000 00000 ,
005302	SET F 00011 01000 11000 00000 ,
005303	SET F 00011 01001 11000 00000 ,
005304	SET F 00011 01000 11000 00000 ,
005305	SET F 00011 01001 11000 00000 ,
005306	SET F 00011 01000 11000 00000 ,
005307	SET F 00011 01001 11000 00001 ,
005310	SET F 00011 01000 11000 00000 ,
005311	SET F 00011 01001 11000 00000 ,
005312	SET F 00011 01000 11000 00000 ,
005313	SET F 00011 01001 11000 00000 ,
005314	SET F 00011 01000 11000 00000 ,
005315	SET F 00011 01001 11000 00000 ,
005316	SET F 00011 01000 11000 00000 ,
005317	SET F 00011 01001 11000 00000 ,
005320	SET F 00011 01000 11000 00000 ,
005321	SET F 00011 00001 11000 00001 ,
005322	SET F 00011 00000 11000 00000 ,
005323	SET F 00011 00001 11000 00000 ,
005324	SET F 00011 00000 11000 00000 ,
005325	SET F 00011 00001 11000 00000 ,
005326	SET F 00011 00000 11000 00000 ,
005327	SET F 00011 00001 11000 00000 ,
005330	SET F 00011 00000 11000 00000 ,
005331	SET F 00011 00001 11000 00000 ,
005332	SET F 00011 00000 11000 00000 ,
005333	SET F 00011 00001 11000 00001 ,
005334	SET F 00011 00000 11000 00000 ,
005335	SET F 00011 00001 11000 00000 ,
005336	SET F 00011 00000 11000 00000 ,
005337	SET F 00011 00001 11000 00000 ,
005340	SET F 00011 00000 11000 00000 ,

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005341 SET F 00011 00001 11000 00000 ,
005342 SET F 00011 00000 11000 00000 ,
005343 SET F 00011 00001 11000 00000 ,
005344 SET F 00011 00000 11000 00000 ,
005345 SET F 00011 00001 11000 00001 ,
005346 SET F 00011 00000 11000 00000 ,
005347 SET F 00011 00001 11000 00000 ,
005350 SET F 00011 00000 11000 00000 ,
005351 SET F 00011 00001 11000 00000 ,
005352 SET F 00011 00000 11000 00000 ,
005353 SET F 00011 00001 11000 00000 ,
005354 SET F 00011 00000 11000 00000 ,
005355 SET F 00011 00001 11000 00000 ,
005356 SET F 00011 00000 11000 00000 ,
005357 SET F 00011 00001 11000 00001 ,
005360 SET F 00011 00000 11000 00000 ,
005361 SET F 00011 00001 11000 00000 ,
005362 SET F 00011 00000 11000 00000 ,
005363 SET F 00011 00001 11000 00000 ,
005364 SET F 00011 00000 11000 00000 ,
005365 SET F 00011 00001 11000 00000 ,
005366 SET F 00011 00000 11000 00000 ,
005367 SET F 00011 00001 11000 00000 ,
005370 SET F 00011 00000 11000 00000 ,
005371 SET F 00011 00001 11000 00001 ,
005372 SET F 00011 00000 11000 00000 ,
005373 SET F 00011 00001 11000 00000 ,
005374 SET F 00011 00000 11000 00000 ,
005375 SET F 00011 00001 11000 00000 ,
005376 SET F 00011 00000 11000 00000 ,
005377 SET F 00011 00001 11000 00000 ,
005400 SET F 00011 00000 11000 00000 ,
005401 SET F 00011 00001 11000 00000 ,
005402 SET F 00011 00000 11000 00000 ,
005403 SET F 00011 00001 11000 00001 ,
005404 SET F 00011 00000 11000 00000 ,
005405 SET F 00011 00001 11000 00000 ,
005406 SET F 00011 00000 11000 00000 ,
005407 SET F 00011 00001 11000 00000 ,
005410 SET F 00011 00000 11000 00000 ,
005411 SET F 00011 00001 11000 00000 ,
005412 SET F 00011 00000 11000 00000 ,
005413 SET F 00011 00001 11000 00000 ,
005414 SET F 00011 00000 11000 00000 ,
005415 L7@ SET F 00011 00001 11000 00011 ,
005416
005416 IF SWITCH EQ 7.2 THEN GOTO LOOP ,
005420
005420 SET START 0 ,
005421 SET MAJOR 1, L6 ,
005422 SET MINOR 1, S6, L6 ,
005423 ENABLE TEST , REM 6, VDD = C ;
005424
005424 FORCE VF2 V2, RNG3 , REM VDD = B ;
005425 SET START 320 ;
005426 SET MAJOR 1, L7 ,
005427 SET MINOR 1, S7, L7 ;
005430 ENABLE TEST , REM 7, VDD = B ;
005431

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005431      SKIP:      IF COMP EQ 0 THEN GOTO VTEST1;
005432
005433      IF COMP EQ 1 THEN BEGIN
005434      OUT = 16;
005435      SET MB * (15:0) 10000 (40:0) ; REM OUT 16 = Q6 ;
005436      SET S0 V9, RNG2 ; REM GP. 2 ;
005437      SET S1 V10, RNG2 ;
005440      END ;
005440      IF COMP EQ 2 THEN BEGIN
005441      OUT = 6;
005442      SET MB * 00000 10000 (50:0) ; REM OUT 6 = Q4 ;
005443      SET S0 V11, RNG3 ; REM GP. 3 ;
005444      SET S1 V12, RNG2 ;
005445      END ;
005445      IF COMP EQ 3 THEN BEGIN
005446      OUT = 3;
005447      SET MB * 00100 (05:0) ; REM OUT 3 = ARM ;
005450      SET S0 V13, RNG3 ; REM GP. 4 ;
005451      SET S1 V14, RNG2 ;
005452      END ;
005452      IF COMP EQ 4 THEN BEGIN
005453      OUT = 4;
005454      SET MB * 00010 (05:0) ; REM OUT 4 = FIRE ;
005455      SET S0 V15, RNG3 ; REM GP. 5 ;
005456      SET S1 V16, RNG2 ;
005457      END ;
005457      GOTO NEXT0 ; REM LOOP 4 TIMES BEFORE EXIT;
005460
005460      VTEST1:      WRITE /PASSED FUNC. TEST. /;
005461
005461      IF SWITCH NEQ 8 THEN GOTO IDDPAT;
005463      VARD:
005463      FORCE VF2 V1, RNG3; REM VDD (A);
005464      DCL JPIN[0]/11,12,14,3,4// REM SP HI, LP HI,
005465      G32 LO, ARM LO, FIRE HI;
005465      DCL JVAL[0]/-1,2,-0,8,-19,0,-27,0,-2,0//
005466      DCDLY = 10E-3;
005467      SET DELAY DCDLY, DC;
005470
005470      RTN3:      CYCLE = CYCLE + 1;
005471      FOR I = 1 THRU JPIN[0] DO BEGIN
005472      IP = JPIN[I];
005473      IV = JVAL[I];
005474
005474      SET PMU SENSE, AUTO;
005475      SET PMU FORCEV, AUTO;
005476
005476      CALL VDATA(IV,IP);
005477      END;
005477
005477      IF CYCLE EQ 1 THEN BEGIN
005500      DCL JVAL[0]/-0,8,-0,5,-14,0,-21,0,-2,2//
005501      FORCE VF2 V2, RNG3; REM VDD (B);
005502      GOTO RTN3;
005503      END;
005503

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005503
005503      IF CYCLE EQ 2 THEN BEGIN
005504      DCL JVAL(5)/=-0.7,-0.35,-10.0,-17.0,-2.3/
005505      FORCE VF2 V3, RING3,          REM VDD (C),
005506      GOTO R1N3;
005507      END;
005507      COMP = 0;
005510
005510      REM HDL IDD TEST;
005510      IDDPAT;
005510      XPMU FIN;
005511
005511      INSERT HDLP4;          REM 246 PATTERN LOAD FOR PWR T,
005511      REM HDL MOS SCALER PATTERN FOR LOAD 4 'HDLP4' 6/28/74.
005511      BY H. S. GILL;
005511      ENABLE DA-MB ;
005511      SPI@ SET F 00001 01001 00111 00000 ;
005512      SET F 00001 01000 00111 10000 ;
005513      SET F 00001 01001 00111 00000 ;
005514      SET F 00001 01000 00111 10000 ;
005515      SET F 00001 01001 00111 00000 ;
005516      SET F 00001 01000 00111 10000 ;
005517      SET F 00001 01001 00111 00000 ;
005520      SET F 00001 01000 00111 10000 ;
005521      SET F 00001 01001 00111 00000 ;
005522      SET F 00001 01000 00111 10000 ;
005523      SET F 00001 01001 00111 00001 ;
005524      SET F 00001 01000 00111 10000 ;
005525      SET F 00001 01001 00111 00000 ;
005526      SET F 00001 01000 00111 10000 ;
005527      SET F 00001 01001 00111 00000 ;
005530      SET F 00001 01000 00111 10000 ;
005531      SET F 00001 01001 00011 00000 ;
005532      SET F 00001 01000 00011 10000 ;
005533      SET F 00001 01001 00011 00000 ;
005534      SET F 00001 01000 10011 10000 ;
005535      SET F 00001 01001 11011 00001 ;
005536      SET F 00001 01000 11011 00000 ;
005537      SET F 00001 01001 11011 10000 ;
005540      SET F 00001 01000 11011 10000 ;
005541      SET F 00001 01001 11011 00000 ;
005542      SET F 00001 01000 11011 00000 ;
005543      SET F 00001 01001 11011 10000 ;
005544      SET F 00001 01000 11011 10000 ;
005545      SET F 00001 01001 11011 00000 ;
005546      SET F 00001 01000 11011 00000 ;
005547      SET F 00001 01001 11011 10001 ;
005550      SET F 00001 01000 11011 10000 ;
005551      SET F 00001 01001 11011 00000 ;
005552      SET F 00001 01000 11011 00000 ;
005553      SET F 00001 01001 11011 10000 ;
005554      SET F 00001 01000 11011 10000 ;
005555      SET F 00001 01001 11011 00000 ;
005556      SET F 00001 01000 11011 00000 ;
005557      SET F 00001 01001 11011 10000 ;
005560      SET F 00001 01000 11011 10000 ;
005561      SET F 00001 01011 11011 00001 ;
005562      SET F 00001 01010 11011 00000 ;

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615 0552 401

005563	SET F 00001 01011 11011 10000 ;
005564	SET F 00001 01010 11011 10000 ;
005565	SET F 00001 11011 11001 10000 ;
005566	SET F 00001 11010 11001 10000 ;
005567	SET F 00001 01011 11011 10000 ;
005570	SET F 00001 01010 11011 10000 ;
005571	SET F 00001 11011 11001 10000 ;
005572	SET F 00001 11010 11001 10000 ;
005573	SET F 00001 01011 11011 10001 ;
005574	SET F 00001 01010 11011 10000 ;
005575	SET F 00001 11011 11001 10000 ;
005576	SET F 00001 11010 11001 10000 ;
005577	SET F 00001 01011 11011 10000 ;
005600	SET F 00001 01010 11011 10000 ;
005601	SET F 00001 11011 11001 10000 ;
005602	SET F 00001 11010 11001 10000 ;
005603	SET F 00001 01011 11011 10000 ;
005604	SET F 00001 01010 11011 10000 ;
005605	SET F 00000 11011 11001 10001 ;
005606	SET F 00000 01010 11001 10000 ;
005607	SET F 00000 01011 11011 10000 ;
005610	SET F 00000 01010 11011 10000 ;
005611	SET F 00000 11011 11001 10000 ;
005612	SET F 00000 01010 11001 10000 ;
005613	SET F 00000 01011 11011 10000 ;
005614	SET F 00000 01010 11011 10000 ;
005615	SET F 00000 11011 11001 10000 ;
005616	SET F 00000 01010 11001 10000 ;
005617	SET F 00000 01011 11011 10001 ;
005620	SET F 00000 01010 11011 10000 ;
005621	SET F 00000 11011 11001 10000 ;
005622	SET F 00000 01010 11001 10000 ;
005623	SET F 00000 01011 11011 10000 ;
005624	SET F 00000 01010 11011 10000 ;
005625	SET F 00000 11011 11001 10000 ;
005626	SET F 00000 01010 11001 10000 ;
005627	SET F 00000 01011 11011 10000 ;
005630	SET F 00000 01010 11011 10000 ;
005631	SET F 00001 11011 11001 10001 ;
005632	SET F 00001 11010 11001 10000 ;
005633	SET F 00001 01011 11011 10000 ;
005634	SET F 00001 01010 11011 10000 ;
005635	SET F 00001 11011 11001 10000 ;
005636	SET F 00001 11010 11001 10000 ;
005637	SET F 00001 01011 11011 10000 ;
005640	SET F 00001 01010 11011 10000 ;
005641	SET F 00001 11011 11001 10000 ;
005642	SET F 00001 11010 11001 10000 ;
005643	SET F 00001 01011 11011 10001 ;
005644	SET F 00001 01010 11011 10000 ;
005645	SET F 00001 11011 11001 10000 ;
005646	SET F 00001 11010 11001 10000 ;
005647	SET F 00001 01011 11011 10000 ;
005650	SET F 00001 01010 11011 10000 ;
005651	SET F 00001 11011 11001 10000 ;
005652	SET F 00001 11010 11001 10000 ;
005653	SET F 00001 01011 11011 10000 ;
005654	SET F 00001 01010 11011 10000 ;
005655	SET F 00001 00011 11001 10011 ;

615 0552 401

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005656 SET F 00001 00010 11001 10000 ,
005657 SET F 00001 00011 11011 10000 ,
005660 SET F 00001 00010 11011 10000 ,
005661 SET F 00001 00011 11001 10000 ,
005662 SET F 00001 00010 11001 10000 ,
005663 SET F 00001 00011 11011 10000 ,
005664 SET F 00001 00010 11011 10000 ,
005665 SET F 00001 00011 11001 10000 ,
005666 SET F 00001 00010 11001 10000 ,
005667 SET F 00001 00011 11011 10001 ,
005670 SET F 00001 00010 11011 10000 ,
005671 SET F 00001 00011 11001 10000 ,
005672 SET F 00001 00010 11001 10000 ,
005673 SET F 00001 00011 11011 10000 ,
005674 SET F 00001 00010 11011 10000 ,
005675 SET F 00001 00011 11001 10000 ,
005676 SET F 00001 00010 11001 10000 ,
005677 SET F 00001 00011 11011 10000 ,
005700 SET F 00001 00010 11011 10000 ,
005701 SET F 00001 11011 11001 10001 ,
005702 SET F 00001 11010 11001 10000 ,
005703 SET F 00001 01011 11011 10000 ,
005704 SET F 00001 01010 11011 10000 ,
005705 SET F 00001 11011 11001 10000 ,
005706 SET F 00001 11010 11001 10000 ,
005707 SET F 00001 01011 11011 10000 ,
005710 SET F 00001 01010 11011 10000 ,
005711 SET F 00001 11011 11001 10000 ,
005712 SET F 00001 11010 11001 10000 ,
005713 SET F 00001 01011 11011 10001 ,
005714 SET F 00001 01010 11011 10000 ,
005715 SET F 00001 11011 11001 10000 ,
005716 SET F 00001 11010 11001 10000 ,
005717 SET F 00001 01011 11011 10000 ,
005720 SET F 00001 01010 11011 10000 ,
005721 SET F 00001 11011 11001 10000 ,
005722 SET F 00001 11010 11001 10000 ,
005723 SET F 00001 01011 11011 10000 ,
005724 SET F 00001 01010 11011 10000 ,
005725 SET F 00001 11011 11001 10001 ,
005726 SET F 00001 11010 11001 10000 ,
005727 SET F 00001 01011 11011 10000 ,
005730 SET F 00001 01010 11011 10000 ,
005731 SET F 00001 11011 11001 10000 ,
005732 SET F 00001 11010 11001 10000 ,
005733 SET F 00001 01011 11011 10000 ,
005734 SET F 00001 01010 11011 10000 ,
005735 SET F 00001 11011 11001 10000 ,
005736 SET F 00001 11010 11001 10000 ,
005737 SET F 00001 01011 11011 10001 ,
005740 SET F 00001 01010 11011 10000 ,
005741 SET F 00001 11011 11001 10000 ,
005742 SET F 00001 11010 11001 10000 ,
005743 SET F 00001 01011 11011 10000 ,
005744 SET F 00001 01010 11011 10000 ,
005745 SET F 00001 11011 11001 10000 ,
005746 SET F 00001 11010 11001 10000 ,
005747 SET F 00001 01011 11011 10000 ,
005750 SET F 00001 01010 11011 10000 ,

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appendix b

005751	SET F 00101 01001 00111 00001 ;
005752	SET F 00101 01000 00111 10000 ;
005753	SET F 00101 01001 00111 00000 ;
005754	SET F 00101 01000 00111 10000 ;
005755	SET F 00101 01001 00111 00000 ;
005756	SET F 00101 01000 00111 10000 ;
005757	SET F 00101 01001 00111 00000 ;
005760	SET F 00101 01000 00111 10000 ;
005761	SET F 00101 01001 00111 00000 ;
005762	SET F 00101 01000 00111 10000 ;
005763	SET F 00101 01001 00111 00001 ;
005764	SET F 00101 01000 00111 10000 ;
005765	SET F 00101 01001 00111 00000 ;
005766	SET F 00101 01000 00111 10000 ;
005767	SET F 00101 01001 00111 00000 ;
005770	SET F 00101 01000 00111 10000 ;
005771	SET F 00101 01001 00111 00000 ;
005772	SET F 00101 01000 00111 10000 ;
005773	SET F 00101 01001 00111 00000 ;
005774	SET F 00101 01000 00111 10000 ;
005775	SET F 00101 01001 00111 00001 ;
005776	SET F 00101 01000 00111 10000 ;
005777	SET F 00101 01001 00111 00000 ;
006000	SET F 00101 01000 00111 10000 ;
006001	SET F 00101 01001 00111 00000 ;
006002	SET F 00101 01000 00111 10000 ;
006003	SET F 00101 01001 00111 00000 ;
006004	SET F 00101 01000 00111 10000 ;
006005	SET F 00101 01001 00111 00000 ;
006006	SET F 00101 01000 00111 10000 ;
006007	SET F 00101 01001 00111 00001 ;
006010	SET F 00101 01000 00111 10000 ;
006011	SET F 00101 01001 00111 00000 ;
006012	SET F 00101 01000 00111 10000 ;
006013	SET F 00101 01001 00111 00000 ;
006014	SET F 00101 01000 00111 10000 ;
006015	SET F 00101 01001 00111 00000 ;
006016	SET F 00101 01000 00111 10000 ;
006017	SET F 00101 01001 00111 00000 ;
006020	SET F 00101 01000 00111 10000 ;
006021	SET F 00101 01001 00111 00011 ;
006022	SET F 00101 01000 00111 10000 ;
006023	SET F 00101 01001 00111 00000 ;
006024	SET F 00101 01000 00111 10000 ;
006025	SET F 00101 01001 00111 00000 ;
006026	SET F 00101 01000 00111 10000 ;
006027	SET F 00101 01001 00111 00000 ;
006030	SET F 00101 01000 00111 10000 ;
006031	SET F 00101 01001 00111 00000 ;
006032	SET F 00101 01000 00111 10000 ;
006033	SET F 00101 01001 00111 00001 ;
006034	SET F 00101 01000 00111 10000 ;
006035	SET F 00101 01001 00111 00000 ;
006036	SET F 00101 01000 00111 10000 ;
006037	SET F 00101 01001 00111 00000 ;
006040	SET F 00101 01000 00111 10000 ;
006041	SET F 00101 01001 00111 00000 ;
006042	SET F 00101 01000 00011 10000 ;
006043	SET F 00101 01001 00011 00000 ;

615 0552 401


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006044 SET F 00101 01000 10011 10000 ;
006045 SET F 00101 01001 11011 00001 ;
006046 SET F 00101 01000 11011 00000 ;
006047 SET F 00101 01001 11011 10000 ;
006050 SET F 00101 01000 11011 10000 ;
006051 SET F 00101 01001 11011 00000 ;
006052 SET F 00101 01000 11011 00000 ;
006053 SET F 00101 01001 11011 10000 ;
006054 SET F 00101 01000 11011 10000 ;
006055 SET F 00101 01001 11011 00000 ;
006056 SET F 00101 01000 11011 00000 ;
006057 SET F 00101 01001 11011 10001 ;
006060 SET F 00101 01000 11011 10000 ;
006061 SET F 00101 01001 11011 00000 ;
006062 SET F 00101 01000 11011 00000 ;
006063 SET F 00101 01001 11011 10000 ;
006064 SET F 00101 01000 11011 10000 ;
006065 SET F 00101 01001 11011 00000 ;
006066 SET F 00101 01000 11011 00000 ;
006067 SET F 00101 01001 11011 10000 ;
006070 SET F 00101 01000 11011 10000 ;
006071 SET F 00101 01011 11011 00001 ;
006072 SET F 00101 01010 11011 00000 ;
006073 SET F 00101 01011 11011 10000 ;
006074 SET F 00101 01010 11011 10000 ;
006075 SET F 00101 11011 11001 10000 ;
006076 SP2@ SET F 00101 11010 11001 10000 ;
006077
006077 SET DA * 1100101111 0010101000;
006100 SET MB * (60:0);
006101 FORCE VF2 V1, RNG3; REM VDD (A);
006102 SET MAJOR 1, SP2;
006103 SET MINOR 1, SP1, SP2;
006104 ENABLE TEST ; REM TEST AT PATT. 246;
006105
006105 IF SWITCH NEQ 8 THEN GOTO VPASS;
006107 VTEST2: FORCE VF2 V1, RNG3; REM VDD (A);
006110 DCL KPINC3/0, = 16, = 3%; REM 06 HI, 04 HI, ARM HI;
006111 DCL KVAL3/0, = 72, = 28%;
006112 RTN4: CYCLE = CYCLE + 1;
006113 FOR I = 1 THRU KPINC03 DO BEGIN
006114 IP = KPINC10;
006115 IV = KVAL11;
006116
006116 SET PMU SENSE, AUTO;
006117 SET PMU FORCEV, AUTO;
006120
006120 CALL VDATA(IV, IP);
006121 END;
006121
006121 IF CYCLE EQ 4 THEN BEGIN
006122 DCL KVAL3/0, = 76, = 24%;
006123 FORCE VF2 V2, RNG3; REM VDD (B);
006124 GOTO RTN4;
006125 END;
006125
006125 IF CYCLE EQ 5 THEN BEGIN
006126 DCL KVAL3/0, = 84, = 28%;

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615 0552 401

appendix b

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006127      FORCE VF2 V3, RNG3;                      REM  VDD (C);
006130      GOTO RTN4;
006131      END;
006131
006131      SUBR VDATA(IV, IP);
006131      FORCE PMU IV;
006132      ENABLE RELAY;
006133      CPMU PIN IP;
006134      DISABLE RELAY;
006135
006135      SET PMU SENSE, AUTO;
006136      SET PMU FORCE1, AUTO;
006137
006137      FORCE PMU 0;
006140      FORCE DELAY;  MEASURE VALUE;
006142
006142      ENABLE RELAY;
006143      XPMU PIN;
006144      DISABLE RELAY;
006145      END;
006145
006145      VPASS:  IF SWITCH EQ 1 OR SWITCH EQ 5 THEN GOTO DCTEST;
006147              IF SWITCH LT 3 OR SWITCH EQ 8 THEN ON DCT, DCPWR;
006151              XPMU PIN;
006152              FORCE VF2 V1, RNG3;
006153              SET PMU SENSE, RNG3;
006154              ENABLE DCT1 GT IAMIN AMPS;
006155              ENABLE DCT0 LT IAMAX AMPS;
006156
006156              FORCE VOLTAGE -27.6 VOLTS, RNG3;
006157              ENABLE RELAY;
006160              CPMU PIN 1;
006161              DISABLE RELAY;
006162              FORCE DELAY;  MEASURE VALUE;
006164              ENABLE RELAY;
006165              XPMU PIN;
006166              DISABLE RELAY;
006167              FORCE VOLTAGE 0.0, RNG3;
006170
006170              WRITE 'PASSED DC POWER TEST.';
006171              DISABLE DCT1;
006172              DISABLE DCT0;
006173
006173              IF SWITCH NEQ 8 THEN GOTO DCTEST;
006175      VTEST3:  FORCE VF2 V1, RNG3;                      REM  VDD (A);
006176              SET F 00001 01001 00111 00000;
006177              ENABLE TEST;
006200              SET PMU SENSE, RNG3;
006201              FORCE CURRENT 0, RNG0;
006202              DEL LPIN(6)/11, 12, 16, 14, 6, 4;  REM  SP LO, LP LO, Q6 LO,
006203                                              G32 HI, Q4 LO, FIRE LO;
006203
006203      RTN5:  CYCLE = CYCLE + 1;
006204              FOR I = 1 THRU LPIN(0) DO BEGIN
006205                  CPMU PIN LPIN(I);
006206                  FORCE DELAY;
006207                  MEASURE VALUE;
006210                  END;
006210

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615 0552 401

appendix b

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006210      IF CYCLE EQ 7 THEN BEGIN
006211      FORCE VF2 V2, RNG3,
006212      END,
006212
006212      IF CYCLE EQ 7 THEN GOTO RTNS;
006214      IF CYCLE EQ 8 THEN BEGIN
006215      FORCE VF2 V3, RNG3,
006216      END,
006216
006216      IF CYCLE EQ 8 THEN GOTO RTNS;
006220
006220      CYCLE = 0;
006221
006221      DCTEST:
006221      REM   BREAKDOWN VOLTAGE TEST, DATA INPUTS, PP. A2.1;
006221      XPMU PIN;
006222      FORCE VF2 V3, RNG3;
006223      IF SWITCH EQ 5 THEN GOTO FPASS;
006225      IF SWITCH LT 3 OR SWITCH EQ 8 THEN ON DCT, DCBVOL;
006227      FORCE CURRENT 0, RNG1;
006230      SET DA * (60:1);
006231      SET MA * (60:0);
006232      DCDLY = 10E-3;
006233      SET DELAY DCDLY, DC;
006234      DCL MPINC(1/5, 7, 9, 10, 13, 15);
006235      SET PMU SENSE, RNG3;
006236      VERK = -28.0;
006237      ENABLE DCTO GT VERK VOLTS;
006240      FOR I = 1 THRU MPINC(1) DO BEGIN
006241      CPMU PIN MPINC(I);
006242      FORCE CURRENT -10E-6, RNG1;
006243      FORCE DELAY;
006244      MEASURE VALUE;
006245      FORCE CURRENT 0.0, RNG1;
006246      IF BPASS EQ 1 THEN
006247      WRITE " ", MPINC(I), VALUE;
006250      END;
006250      XPMU PIN;
006251      SET R (9:1);
006252      ENABLE DCTO GT 6 VOLTS;
006253      CPMU PIN 9;
006254      FORCE CURRENT 3E-3, RNG2;
006255      FORCE DELAY;
006256      MEASURE VALUE;
006257      FORCE CURRENT 0, RNG2;
006260      IF BPASS EQ 1 THEN
006261      WRITE " ", 9, VALUE;
006262      XPMU PIN;
006263      SET R (60:0);
006264      WRITE "PASSED DC BREAKDOWN VOL. TEST. ";
006265      IF SWITCH LT 3 OR SWITCH EQ 8 THEN GOTO FPASS
006267      ELSE GOTO CTEST;
006270
006270      LOOP:
006270      REM   SCOPE LOOP;
006270      IF SWITCH EQ 7 THEN BEGIN
006271      SET MAJOR 1, L2;
006272      SET MINOR 1, S1, L2;
006273      END;
006273      IF SWITCH EQ 7.1 THEN BEGIN

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615 0552 401

appendix b

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006274      SET MAJOR 1, L3 ;
006275      SET MINOR 1, S3, L3 ;
006276      END ;
006276      IF SWITCH EQ 7.2 THEN BEGIN
006277      SET MAJOR 1, L7 ;
006300      SET MINOR 1, S6, L7 ;
006301      END ;
006301      X = 0 ;
006302      AT X ; SET F1[59]1 ;
006304      ENABLE TEST CONTIN ;
006305      PAUSE 1 ;
006306      ENABLE TEST MOMENT ;
006307      GOTO ABORT ;
006310
006310      CTEST:
006310      REM CONTINUITY TEST ;
006310      DCL IPIN[15]/1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16/ ;
006311      DCL SPIN[14]/2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16/ ;
006312      CONN DPS1 8, 60 ; REM GND, ESSW ;
006313
006313      INSERT FINISH;
006313      REM *****
006313      FINISH 7/30/75.
006313      ***** ;
006313      REM CONTINUITY TEST;
006313      DCDLY = 1E-3;
006314      ICONT = -10E-3;
006315      IOPEN = 2E-6;
006316      ISHORT = 1E-3;
006317      VFC = -1.5;
006320      XPMU PIN;
006321      SET DELAY DCDLY, DC;
006322
006322      FORCE E0 0.0, RNG2; FORCE E1 0.0, RNG2;
006324      FORCE EB0 0.0, RNG2; FORCE EB1 0.0, RNG2;
006326      FORCE EA0 0.0, RNG2; FORCE EA1 0.0, RNG2;
006330      FORCE EC0 0.0, RNG2; FORCE EC1 0.0, RNG2;
006332      FORCE VF1 0.0, RNG2;
006333      FORCE VF2 0.0, RNG2;
006334      FORCE VF3 0.0, RNG2;
006335      XCON VF2; XCON VF3;
006337      SET R * (60:0);
006340      SET S * (60:0);
006341      SET DA * (60:1);
006342      SET MA * (60:0);
006343      ENABLE DA, MA;
006343      SET F * (60:0);
006344      ENABLE TEST;
006345
006345      IF SWITCH EQ 1 OR SWITCH EQ 5 THEN BEGIN
006346      FORCE CURRENT 0.0, RNG3;
006347      ENABLE RELAY;
006350      CPMU PIN 60;
006351      DISABLE RELAY;
006352      SET CLAMP NEG 4.5;
006353      SET FMU SENSE, RNG2;
006354      FORCE CURRENT ICONT, RNG3;
006355      FORCE DELAY; MEASURE VALUE;
006357      IF VALUE LT VFC THEN VFC = VALUE;

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615 0552 401


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006361      FORCE CURRENT 0.0, RNG3;
006362      WRITE (* VFC = %, VFC;
006363      END;
006364      XPMU PIN;
006365      SET CLAMP OFF;
006365      OP:
006365      IF SWITCH LT 3 THEN ON DCT, OPEN;
006367      SET DELAY 0.0, DC;
006370      FORCE VF1 VFC, RNG2;
006371      FORCE VOLTAGE 0.0, RNG2;
006372      SET PMU SENSE, RNG1;
006373      ENABLE DCTO LT IOFEN;
006374      DCDLY = 5E-3;
006375
006375      FOR I = 1 THRU IPINIOJ DO BEGIN
006376      CPMU PIN IPINIOJ;
006377      SET DELAY DCDLY, DC;
006400      FORCE DELAY, MEASURE VALUE;
006402      SET DELAY 0.0, DC;
006403      END;
006403      FORCE CURRENT 0;
006404      XPMU PIN;
006405
006405      SH:
006405      IF SWITCH LT 3 THEN ON DCT, SHORT;
006407      VFC = -0.2;
006410      DCDLY = 10E-3;
006411      SET DELAY 0.0, DC;
006412      FORCE EO VFC, RNG2;
006413      FORCE VF1 VFC, RNG2;
006414      FORCE VOLTAGE 0.0, RNG1;
006415      SET PMU SENSE, RNG2;
006416      ENABLE DCTO GT ISHORT;
006417
006417      FOR I = 1 THRU SPINIOJ DO BEGIN
006420      CPMU PIN SPINIOJ;
006421      SET DELAY DCDLY, DC;
006422      FORCE DELAY, MEASURE VALUE;
006424      SET DELAY 0.0, DC;
006425      END;
006425      FORCE CURRENT 0;
006426      XPMU PIN;
006427
006427      GLOB5 = 0; GLOB6 = 0;
006431      WRITE (* COMPLETED CONTINUITY TEST. *);
006432      IF SWITCH LT 3 THEN GOTO FCFAIL;
006434      ELSE GOTO ABORT;
006435
006435      OPEN:      GLOB5 = GLOB5 + 1B;      REM 1ST 4 BITS;
006436      GOTO RTN2;
006437      SHORT:    GLOB5 = GLOB5 + 20B;      REM 2ND 4 BITS;
006440
006440      RTN2:      GLOB5 = GLOB5 + 400B;      REM 3RD 4 BITS;
006441      IF (GLOB5 AND 4000B) NEQ 0 THEN BEGIN
006442      FOR I = 1 THRU 8 DO BEGIN
006443      WRITE (EIR) 0;
006444      WRITE (EIR) 1777B;
006445      END;

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appendix b

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006445      OFF = GLOB5 AND 17B;
006446      SHP = (GLOB5 AND 0360B)/10000B;
006447      IF GLOB3 EQ 0 THEN BEGIN
006450      WRITE (LP) ' ';
006451      WRITE (LP) '* OPENS = ', OFF, '* SHORTS = ', SHP;
006452      END;
006453      IF GLOB3 EQ 1 THEN BEGIN
006454      WRITE (TTP) ' ';
006455      WRITE (TTP) '* OPENS = ', OFF, '* SHORTS = ', SHP;
006456      END;
006457      GLOB2 = GLOB2 - 1;
006458      GLOB5 = 0;
006459      IF SWITCH EQ 1 THEN GLOB13 = GLOB13 + 1;
006460      WRITE (EIR) 0B;
006461      GOTO ENND;
006462      END;
006463      GOTO CTFAIL ;
006464
006465      HPASS:  GLOB7 = GLOB7 + 1;          REM TEST PASS COUNTER;
006466      GLOB5 = 0;
006467      IF (GLOB1 AND 77B) LT 77B THEN GLOB1 = GLOB1+1;
006468      WRITE '* PASSED TEST. *';
006469      WRITE (EIR) BIN[1];
006470      GOTO ABORT;
006471
006472      CTFAIL: IF (SWITCH GT 2 AND SWITCH LT 3) AND GLOB6 EQ 0
006473      THEN BEGIN
006474      WRITE (EIR) BIN[2];
006475      GLOB6 = 1;
006476      GLOB2 = GLOB2 - 1;
006477      GOTO ENND;
006478      END;
006479      GLOB6 = 0;
006480      GLOB8 = GLOB8 + 1;          REM CONT. FAILURE COUNTER;
006481      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006482      WRITE (EIR) BIN[3];
006483      WRITE '* FAILED CONT. TEST. *';
006484      GOTO ABORT;
006485
006486      FCFAIL: GLOB9 = GLOB9 + 1;          REM FUNC. FAILURE COUNTER;
006487      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006488      WRITE (EIR) BIN[4];
006489      WRITE '* FAILED FUNC. TEST. *';
006490      GOTO ABORT;
006491
006492      DCLEAK: GLOB10 = GLOB10 + 1;        REM LEAKAGE TEST FAIL COUNTER;
006493      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006494      WRITE (EIR) BIN[5];
006495      WRITE '* FAILED DC LEAKAGE TEST. *';
006496      GOTO ABORT;
006497
006498      DCBVOL: GLOB11 = GLOB11 + 1;        REM B. VOL FAIL COUNTER;
006499      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006500      WRITE (EIR) BIN[6];
006501      WRITE '* FAILED DC BREAKDOWN VOL. TEST. *';
006502      GOTO ABORT;
006503
006504      TRIPFL: GLOB12 = GLOB12 + 1;        REM TRIP FAILURE COUNTER;
006505      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;

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006534      WRITE (EIR) BIN(7);
006535      WRITE (* FAILED CURRENT TRIP TEST. *);
006536      GOTO ABORT;
006537
006537      DCVOL:      GLOB19 = GLOB19 + 1;          REM DC VOL FAILURE COUNTER;
006540      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006542      WRITE (EIR) BIN(5);
006543      WRITE (* FAILED DC VOL TEST. *);
006544      GOTO ABORT;
006545
006545      DCVOH:      GLOB17 = GLOB17 + 1;          REM DC VOH FAILURE COUNTER;
006546      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006550      WRITE (EIR) BIN(5);
006551      WRITE (* FAILED DC VOH TEST. *);
006552      GOTO ABORT;
006553
006553      DCIIL:      GLOB18 = GLOB18 + 1;          REM DC IIL FAILURE COUNTER;
006554      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006556      WRITE (EIR) BIN(5);
006557      WRITE (* FAILED DC IIL TEST. *);
006560      GOTO ABORT;
006561
006561      DCLKIN:     GLOB14 = GLOB14 + 1;          REM DC INPUT LEAK FAIL. COUNT;
006562      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006564      WRITE (EIR) BIN(5);
006565      WRITE (* FAILED DC INPUT LEAKAGE TEST. *);
006566      GOTO ABORT;
006567
006567      DCLKOT:     GLOB15 = GLOB15 + 1;          REM DC OUTPUT LEAK FAIL COUNT;
006570      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006572      WRITE (EIR) BIN(5);
006573      WRITE (* FAILED DC OUTPUT LEAKAGE TEST. *);
006574      GOTO ABORT;
006575
006575      DCPWR:      GLOB16 = GLOB16 + 1;          REM DC PWR FAIL COUNTER;
006576      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006600      WRITE (EIR) BIN(5);
006601      WRITE (* FAILED DC PWR TEST. *);
006602      GOTO ABORT;
006603
006603      DCPRES:     GLOB17 = GLOB17 + 1;          REM DC PULL UP RES. FAIL COUNTER;
006604      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006606      WRITE (EIR) BIN(5);
006607      WRITE (* FAILED DC INPUT PULL UP RES. TEST. *);
006610      GOTO ABORT;
006611
006611      DCRES:      GLOB17 = GLOB17 + 1;          REM DC RES IMP. FAILURE COUNTER;
006612      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006614      WRITE (EIR) BIN(5);
006615      WRITE (* FAILED LINK/VER RES IMPEDANCE TEST. *);
006616      GOTO ABORT;
006617
006617      DCRDFF:     GLOB18 = GLOB18 + 1;          REM DC ROFF FAILURE COUNTER;
006617      IF (GLOB1 AND 770000B) LT 770000B THEN GLOB1 = GLOB1+10000B;
006620      WRITE (EIR) BIN(5);
006622      ON DCT, DUMF;
006623      ENABLE DCTO LT 50E-3;
006624

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615 0552 401

appendix b

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006625      SET PMU SENSE, RNG3;
006626      FORCE VOLTAGE 0.0, RNG1;
006627      CFMU PIN 59; MEASURE VALUE;
006631      DUMF;
006631      WRITE (TTP) 'FAILED DC ROFF TEST.';
006632      GOTO ABORT;
006633
006633      WAFSMRY: WRITE (TTP) '*****';
006634      WRITE (TTP) '-----OPERATOR NOTE-----';
006635      WRITE (TTP) '*TYPE THE WAFER LOT # TESTED*';
006636      WRITE (TTP) '*****';
006637
006637      READ (TTK) V[15];          REM WAFER LOT # ;
006640
006640      WRITE (TTP) '*****';
006641      WRITE (TTP) '-----OPERATOR NOTE-----';
006642      WRITE (TTP) '*TYPE THE NUMBER OF WAFERS TESTED IN THE LOT*';
006643      WRITE (TTP) '*****';
006644
006644      READ (TTK) V[16];          REM # OF WAFERS TESTED;
006645      V[17] = V[16] * V[5];      REM TOTAL # OF DIE;
006646      V[18] = V[17] - GLOB7;    REM TOT. BAD DIE;
006647      V[19] = GLOB7/V[17] * 100; REM WAFER YIELD;
006650
006650      WRITE (LP) '*****';
006651      WRITE (LP) '* SUMMARY OF WAFER TESTING. *';
006652      WRITE (LP) '*****';
006653      WRITE (LP) '* CHIP CPN ',/35/V[1],/39/'-',/40/V[2],/44/'-',
006654      /44/V[3];
006654      WRITE (LP) '* WAFER LOT # ',/35/V[15];
006655      WRITE (LP) '* WAFERS TESTED AT ',/35/V[4],/40/'C';
006656      WRITE (LP) '* NUMBER OF WAFERS TESTED ',/35/V[16];
006657      WRITE (LP) ' ';
006660      WRITE (LP) '* TOTAL # OF DIE ',/35/GLOB2;
006661      WRITE (LP) '* TOTAL # OF COMP. DIE ',/35/GLOB9;
006662      WRITE (LP) '* TOTAL GOOD DIE ',/35/GLOB7;
006663      WRITE (LP) ' ';
006664      WRITE (LP) '* # OF DIE FAILED CONT. TEST ',/35/GLOB8;
006665      WRITE (LP) '* # OF DIE FAILED FUNC. TEST ',/35/GLOB9;
006666      WRITE (LP) '* # OF DIE FAILED L/V IMP TEST ',/35/GLOB17;
006667      WRITE (LP) '* WAFER YIELD ',/35/V[19];
006670      WRITE (LP) '* *****';
006671
006671      GLOB1=0; GLOB2=0; GLOB3=0; GLOB4=0; GLOB5=0; GLOB6=0;
006677      GLOB7=0; GLOB8=0; GLOB9=0; GLOB10=0; GLOB11=0; GLOB12=0;
006705      GLOB14=0; GLOB15=0; GLOB16=0; GLOB17=0; GLOB18=0; GLOB19=0;
006713      ;
006713      SWITCH = 1;
006714      GOTO ABORT;
006715
006715      PKGSMRY: WRITE (TTP) '*****';
006716      WRITE (TTP) '-----OPERATOR NOTE-----';
006717      WRITE (TTP) '*TYPE THE PACKAGE LOT # TESTED*';
006720      WRITE (TTP) '*****';
006721
006721      READ (TTK) V[20];          REM PKG LOT #;
006722      V[21] = GLOB7/GLOB2 * 100; REM PKG YIELD;
006723      V[22] = GLOB2 - GLOB7;    REM PKGS FAILED;
006724

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006724 WRITE (LP) '*****';
006725 WRITE (LP) '* SUMMARY OF PACKAGE TESTING. *';
006726 WRITE (LP) '*****';
006727 WRITE (LP) '* PACKAGE CPN ',/35/VI11,/39/'-',/40/VI61,/44/'-',
006730 /44/VI71;
006730 WRITE (LP) '* PACKAGE LOT # ',/35/VI201;
006731 WRITE (LP) '* PACKAGES TESTED AT ',/35/GLOB19,/40/'C';
006732 WRITE (LP) ' ';
006733 WRITE (LP) '* TOTAL # OF PACKAGES TESTED ',/35/GLOB2;
006734 WRITE (LP) '* # OF PACKAGES PASSED ',/35/GLOB7;
006735 WRITE (LP) '* # OF PACKAGES FAILED ',/35/VI221;
006736 WRITE (LP) ' ';
006737 WRITE (LP) '* FAILED CONT. TEST ',/35/GLOB8;
006740 WRITE (LP) '* FAILED FUND. TEST ',/35/GLOB9;
006741 WRITE (LP) '* FAILED LEAKAGE TEST ',/35/GLOB10;
006742 WRITE (LP) '* FAILED VOL. BREAKDOWN TEST ',/35/GLOB11;
006743 WRITE (LP) '* FAILED IN LEAKAGE TEST ',/35/GLOB14;
006744 WRITE (LP) '* FAILED OUT LEAKAGE TEST ',/35/GLOB15;
006745 WRITE (LP) '* FAILED POWER TEST ',/35/GLOB16;
006746 WRITE (LP) '* FAILED DL IMP. TEST ',/35/GLOB17;
006747 WRITE (LP) '* FAILED DC ROFF TEST ',/35/GLOB18;
006750 WRITE (LP) ' ';
006751 WRITE (LP) '* PACKAGE YIELD ',/35/VI211;
006752 WRITE (LP) ' *****';
006753
006753 GLOB1=0; GLOB2=0; GLOB3=0; GLOB4=0; GLOB5=0; GLOB6=0;
006761 GLOB7=0; GLOB8=0; GLOB9=0; GLOB10=0; GLOB11=0; GLOB12=0;
006767 GLOB14=0; GLOB15=0; GLOB16=0; GLOB17=0; GLOB18=0; GLOB19=0;
006775 ;
006775 SWITCH = 0;
006776
006776 ABORT: FORCE CURRENT 0.0;
006777 XPMU FIN;
007000 FORCE RESET;
007001 GOTO ENND;
007002
007002 ENND : END ;
0000B COMPILATION ERRS

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APPENDIX C
PARAMETRIC RESULTS OF FIRST ARTICLE QUALITY ACCEPTANCE TESTING

IDD (TERMINAL 1), 1A - SUBGROUP A2, A3, A4
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-24-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4							-7.21	-4.89	-4.15
7527A	11							-6.94	-4.67	-3.98
7528E	16							-7.26	-4.91	-4.19
7528G	21							-7.50	-5.15	-4.36
7527B	22							-6.70	-4.53	-3.82
7528J	28							-7.11	-4.80	-4.06
7528H	48							-7.17	-4.84	-4.07
7528K	50							-7.29	-4.94	-4.19
7527A	51							-8.15	-5.58	-4.75
7527K	53							-6.57	-4.43	-3.75
7527E	58							-7.41	-5.03	-4.31
7527J	66							-6.68	-4.51	-3.80
7527H	70							-7.95	-5.37	-4.54
7527H	74							-8.11	-5.51	-4.67
7527E	76							-6.59	-4.47	-3.78
7525B	81							-7.26	-4.95	-4.19
7527C	87							-6.59	-4.68	-3.98
7529K	89							-7.16	-4.87	-4.15
7529B	94							-7.25	-4.94	-4.16
7529H	98							-6.98	-4.74	-3.99
7529D	110							-7.66	-5.14	-4.37
7529N	114							-7.34	-4.99	-4.20
7529L	118							-6.79	-4.61	-3.89
7529B	122							-7.34	-5.01	-4.23
7529A	133							-6.90	-4.66	-3.90

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP A2, A3, A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-24-76

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527A	11	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7528E	16	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7528G	21	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527B	22	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.64	-27.56	-27.56
7528J	28	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7528H	48	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7528K	50	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7527A	51	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527K	53	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.64	-27.56	-27.56
7527E	58	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527J	66	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7527H	70	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527H	74	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527E	76	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7525B	81	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7527C	87	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.64	-27.56	-27.56
7529K	89	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7529B	94	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.64	-27.56	-27.56
7529H	98	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.64	-27.56	-27.56
7529D	110	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7529N	114	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.60	-27.56	-27.56
7529L	118	-17.04	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7529B	112	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56
7529A	133	-17.00	-17.00	-17.00	-21.56	-21.48	-21.48	-27.56	-27.56	-27.56

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-.12	-.28	-.32	-.16	-.24	-.28	-.20	-.28	-.32
7527A	11	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.28
7528E	16	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7528G	21	-.12	-.28	-.32	-.16	-.28	-.32	-.20	-.28	-.32
7527B	22	-.12	-.28	-.36	-.20	-.28	-.32	-.24	-.28	-.32
7528J	28	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.32
7528H	48	-.12	-.28	-.36	-.20	-.28	-.32	-.20	-.28	-.32
7528K	50	-.12	-.28	-.32	-.16	-.28	-.32	-.20	-.28	-.32
7527A	51	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.32
7527K	53	-.12	-.28	-.36	-.16	-.28	-.32	-.20	-.28	-.32
7527E	58	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.28
7527J	66	-.12	-.32	-.36	-.20	-.28	-.36	-.24	-.28	-.36
7527H	70	-.12	-.28	-.36	-.20	-.28	-.32	-.20	-.28	-.32
7527H	74	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.28
7527E	76	-.16	-.32	-.36	-.20	-.28	-.36	-.24	-.28	-.36
7527B	81	-.16	-.24	-.28	-.20	-.24	-.28	-.20	-.28	-.32
7527C	87	-.12	-.28	-.32	-.16	-.24	-.28	-.24	-.28	-.32
7529K	89	-.12	-.28	-.32	-.16	-.28	-.28	-.20	-.28	-.28
7529B	94	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.28	-.28
7529H	98	-.12	-.28	-.36	-.16	-.28	-.32	-.20	-.28	-.32
REJECT 7529D	110	-.16	-.28	-17.00	-.20	-.28	-21.44	-.20	-.28	-.28
7529N	114	-.12	-.28	-.28	-.16	-.28	-.28	-.20	-.28	-.32
7529L	118	-.12	-.32	-.40	-.20	-.28	-.36	-.24	-.28	-.36
7529B	112	-.12	-.28	-.32	-.16	-.28	-.32	-.20	-.28	-.32
7529A	133	-.12	-.28	-.32	-.16	-.28	-.32	-.20	-.28	-.32

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527A	11	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528E	16	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528G	21	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527B	22	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528J	28	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528H	48	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528K	50	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-17.60	-27.60	-27.60
7527A	51	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-17.60	-27.60	-27.60
7527K	53	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527E	58	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527J	66	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527H	70	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527H	74	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527E	76	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7525B	81	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527C	87	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529K	89	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529B	94	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529H	98	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529D	110	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529N	114	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-17.60
7529L	118	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529B	112	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529A	133	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4
SCALAR OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-24-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-1.36	-2.56	-2.96	-1.72	-2.52	-2.88	-2.16	-2.72	-3.04
7527A	11	-1.36	-2.64	-3.00	-1.72	-2.60	-2.92	-2.20	-2.80	-3.08
7528E	16	-1.28	-2.32	-2.64	-1.68	-2.40	-2.68	-2.12	-2.64	-2.92
7528G	21	-1.36	-2.48	-2.84	-1.72	-2.48	-2.84	-2.20	-2.72	-3.04
7527B	22	-1.40	-2.92	-3.40	-1.76	-2.72	-3.12	-2.24	-2.84	-3.16
7528J	28	-1.36	-2.52	-2.92	-1.68	-2.48	-2.84	-2.16	-2.68	-3.04
7528H	48	-1.36	-2.76	-3.16	-1.72	-2.64	-3.00	-2.20	-2.76	-3.12
7528K	50	-1.40	-2.68	-3.04	-1.72	-2.64	-2.96	-2.20	-2.80	-3.12
7527A	51	-1.36	-2.52	-2.88	-1.72	-2.52	-2.84	-2.16	-2.72	-3.04
7527K	53	-1.40	-2.84	-3.28	-1.72	-2.68	-3.00	-2.24	-2.80	-3.12
7527E	58	-1.40	-2.56	-2.96	-1.72	-2.52	-2.88	-2.20	-2.76	-3.04
7527J	66	-1.40	-3.04	-3.56	-1.80	-2.80	-3.20	-2.32	-2.92	-3.28
7527H	70	-1.40	-2.76	-3.16	-1.72	-2.68	-3.00	-2.20	-2.80	-3.12
7527H	74	-1.32	-2.52	-2.92	-1.68	-2.48	-2.84	-2.16	-2.68	-3.00
7527E	76	-1.44	-2.88	-3.32	-1.84	-2.80	-3.16	-2.36	-2.96	-3.32
7525B	81	-1.28	-2.36	-2.68	-1.68	-2.40	-2.76	-2.16	-2.68	-2.96
7527C	87	-1.40	-2.56	-2.96	-1.76	-2.52	-2.88	-2.24	-2.76	-3.08
7529K	89	-1.36	-2.48	-2.84	-1.72	-2.48	-2.80	-2.20	-2.72	-3.00
7529B	94	-1.32	-2.36	-2.76	-1.68	-2.40	-2.76	-2.16	-2.68	-3.00
7529H	98	-1.40	-2.96	-3.48	-1.76	-2.76	-3.12	-2.32	-2.84	-3.24
7529D	110	-1.36	-2.48	-2.80	-1.72	-2.48	-2.80	-2.20	-2.72	-3.00
7529N	114	-1.36	-2.48	-2.84	-1.72	-2.48	-2.84	-2.16	-2.72	-3.04
7529L	118	-1.48	-3.08	-3.60	-1.84	-2.84	-3.28	-2.36	-3.00	-3.36
7529B	112	-1.40	-2.68	-3.12	-1.72	-2.64	-3.00	-2.24	-2.80	-3.16
7529A	133	-1.36	-2.52	-2.96	-1.68	-2.52	-2.88	-2.16	-2.72	-3.08

TEST LIMITS = 0.0V to -10.0V

AD-A038 513

ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)
MAY 76 G L DONALDSON

UNCLASSIFIED

765-5608-001

HDL-CR-76-146-1

DAA639-75-C-0146

NL

2 OF 3
AD
A038 513



G14 (TERMINAL 5), V5M -SUBGROUP A2,A3,A4
INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-24-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-36.52	-35.28	-34.24			
7527A	11				-33.04	-32.28	-31.72			
7528E	16				-31.36	-30.52	-29.88			
7528G	21				-35.20	-34.24	-33.44			
7527B	22				-32.48	-32.00	-31.52			
7528J	28				-35.52	-34.48	-33.60			
7528H	48				-32.24	-31.44	-30.68			
7528K	50				-35.40	-34.28	-33.40			
7527A	51				-35.20	-34.36	-33.68			
7527K	53				-32.48	-31.80	-31.28			
7527E	58				-34.72	-33.76	-33.08			
7527J	66				-38.52	-37.56	-36.72			
7527H	70				-33.56	-32.84	-32.20			
7527H	74				-34.40	-33.56	-32.88			
7527E	76				-34.40	-33.64	-33.00			
7525B	81				-32.64	-31.88	-31.28			
7527C	87				-35.84	-34.80	-33.80			
7529K	89				-36.04	-34.80	-33.84			
7529B	94				-34.88	-33.92	-33.12			
7529H	98				-33.72	-32.64	-31.76			
7529D	110				-36.20	-35.20	-34.52			
7529N	114				-34.72	-33.72	-32.92			
7529L	118				-32.60	-31.76	-31.00			
7529B	122				-34.68	-33.72	-32.92			
7529A	133				-35.28	-34.16	-33.24			

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP A2 ,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527A	11				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7528E	16				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7528G	21				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527B	22				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7528J	28				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7528H	48				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7528K	50				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527A	51				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527K	53				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527E	58				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527J	66				-21.56	-21.52	-21.56	-27.60	-27.60	-27.60
7527H	70				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527H	74				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7527E	76				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7525B	81				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7527C	87				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529K	89				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7529B	94				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7529H	98				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7529D	110				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7529N	114				-21.56	-21.52	-21.56	-27.60	-27.60	-27.60
7529L	118				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7529B	112				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529A	133				-21.56	-21.52	-21.52	-27.60	-27.60	-27.60

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6)- SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-24-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-.40	-.72	-.88	-.44	-.72	-.84
7527A	11				-.40	-.76	-.88	-.48	-.76	-.88
7528E	16				-.36	-.68	-.80	-.44	-.68	-.76
7528G	21				-.40	-.72	-.84	-.44	-.72	-.84
7527B	22				-.40	-.76	-.92	-.48	-.76	-.88
7528J	28				-.40	-.76	-.88	-.44	-.72	-.84
7528H	48				-.44	-.76	-.92	-.48	-.76	-.88
7528K	50				-.40	-.80	-.92	-.48	-.76	-.88
7527A	51				-.44	-.84	-1.00	-.56	-.80	-.92
7527K	53				-.40	-.80	-.92	-.48	-.76	-.88
7527E	58				-.40	-.72	-.84	-.44	-.72	-.80
7527J	66				-.40	-.80	-.96	-.48	-.76	-.88
7527H	70				-.40	-.76	-.88	-.48	-.72	-.88
7527H	74				-.40	-.76	-.88	-.48	-.72	-.84
7527E	76				-.44	-.84	-1.00	-.52	-.76	-.92
7525B	81				-.40	-.76	-.88	-.48	-.76	-.88
7527C	87				-.40	-.76	-.88	-.48	-.72	-.88
7529K	89				-.40	-.72	-.88	-.44	-.72	-.84
7529B	94				-.40	-.76	-.88	-.48	-.72	-.88
7529H	98				-.40	-.76	-.92	-.48	-.72	-.88
REJECT 7529D	110				-.44	-.72	-21.52	-.44	-.72	-27.60
7529N	114				-.40	-.76	-.88	-.44	-.72	-.88
7529L	118				-.44	-.88	-1.04	-.56	-.80	-.96
7529B	112				-.40	-.76	-.88	-.48	-.72	-.88
7529A	133				-.40	-.76	-.88	-.48	-.72	-.88

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP A2,A3,A4 COLLINS DIVISIONS DATE 7-24-75
 SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
 NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-37.08	-35.80	-34.76			
7527A	11				-31.92	-31.28	-30.72			
7528E	16				-32.28	-32.44	-30.68			
7528G	21				-34.32	-33.48	-32.72			
7527B	22				-32.80	-32.08	-31.48			
7528J	28				-35.64	-34.56	-33.68			
7528H	48				-33.40	-32.44	-31.64			
7528K	50				-35.08	-34.00	-33.12			
7527A	51				-32.92	-32.24	-31.64			
7527K	53				-33.88	-33.08	-32.48			
7527E	58				-34.84	-33.88	-33.20			
7527J	66				-36.24	-35.48	-34.80			
7527H	70				-33.68	-32.92	-32.28			
7527H	74				-35.64	-34.76	-34.00			
7527E	76				-34.12	-33.36	-32.72			
7525B	81				-34.04	-33.16	-32.52			
7527C	87				-36.80	-35.64	-34.64			
7529K	89				-37.32	-35.88	-34.88			
7529B	94				-33.88	-32.96	-32.20			
7529H	98				-33.72	-32.60	-31.68			
7529D	110				-34.04	-33.12	-32.44			
7529N	114				-32.76	-31.84	-31.08			
7529L	118				-32.84	-31.60	-30.88			
7529B	122				-35.84	-34.80	-33.96			
7529A	133				-35.64	-34.48	-33.52			

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M -SUBGROUP A2,A3,A4
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-24-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-35.20	-34.00	-32.92			
7527A	11				-35.60	-34.68	-33.88			
7528E	16				-31.32	-30.44	-29.72			
7528G	21				-35.44	-34.44	-33.52			
7527B	22				-35.00	-34.04	-33.24			
7528J	28				-34.36	-33.32	-32.40			
7528H	48				-35.00	-33.96	-33.04			
7528K	50				-35.44	-34.24	-33.28			
7527A	51				-32.40	-31.72	-31.08			
7527K	53				-33.88	-33.08	-32.44			
7527E	58				-36.56	-35.56	-34.76			
7527J	66				-38.96	-38.00	-37.08			
7527H	70				-36.56	-35.60	-34.76			
7527H	74				-32.56	-31.80	-31.08			
7527E	76				-34.56	-33.72	-32.92			
7525B	81				-31.92	-31.24	-30.64			
7527C	87				-36.80	-35.64	-34.56			
7529K	89				-34.68	-33.48	-32.48			
7529B	94				-34.48	-33.52	-32.60			
7529H	98				-34.32	-33.20	-32.24			
7529D	110				-33.08	-32.20	-31.52			
7529N	114				-33.40	-32.40	-31.48			
7529L	118				-32.00	-31.12	-30.24			
7529B	122				-33.36	-32.48	-31.64			
7529A	133				-35.64	-34.48	-33.48			

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP A2, A3, A4 COLLINS DIVISIONS DATE 7-24-75
 SCALER INPUT (POSITIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
 NEWPORT BEACH, CALIF.

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				+1.00	+ .92	+ .88			
7527A	11				+1.04	+1.04	+1.04			
7528E	16				+1.08	+1.08	+1.08			
7528G	21				+1.08	+1.08	+1.08			
7527B	22				+1.04	+1.04	+1.04			
7528J	28				+1.08	+1.12	+1.12			
7528H	48				+1.04	+1.04	+1.00			
7528K	50				+1.04	+1.04	+1.04			
7527A	51				+1.08	+1.08	+1.08			
7527K	53				+1.08	+1.08	+1.08			
7527E	58				+1.08	+1.12	+1.12			
7527J	66				+1.12	+1.16	+1.16			
7527H	70				+1.04	+1.04	+1.04			
7527H	74				+1.16	+1.28	+1.32			
7527E	76				+1.08	+1.08	+1.08			
7525B	81				+1.04	+1.04	+1.04			
7527C	87				+1.00	+ .92	+ .92			
7529K	89				+1.20	+1.32	+1.36			
7529B	94				+1.28	+1.44	+1.52			
7529H	98				+1.04	+1.04	+1.04			
7529D	110				+1.08	+1.08	+1.08			
7529N	114				+1.20	+1.36	+1.44			
7529L	118				+1.08	+1.08	+1.08			
7529B	122				+1.36	+1.52	+1.68			
7529A	133				+1.08	+1.08	+1.08			

TEST LIMITS = 0.0V to +6.0V

appendix c

CL (TERMINAL 10), V10M SUBGROUP A2,A3,A4
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-33.72	-32.60	-31.64			
7527A	11				-35.92	-34.96	-34.24			
7528E	16				-30.88	-30.04	-29.40			
7528G	21				-32.40	-31.56	-30.84			
7527B	22				-35.02	-34.02	-34.12			
7528J	28				-34.56	-33.56	-32.76			
7528H	48				-33.24	-32.40	-31.64			
7528K	50				-35.64	-34.48	-33.56			
7527A	51				-32.60	-32.00	-31.44			
7527K	53				-34.40	-33.60	-32.96			
7527E	58				-36.24	-35.20	-34.48			
7527J	66				-38.04	-37.20	-36.40			
7527H	70				-35.16	-34.36	-33.68			
7527H	74				-37.12	-36.12	-35.36			
7527E	76				-33.40	-32.64	-31.96			
7525B	81				-34.96	-34.00	-33.36			
7527C	87				-37.20	-36.04	-35.00			
7529K	89				-36.60	-35.32	-34.28			
7529B	94				-33.60	-32.72	-31.92			
7529H	98				-34.68	-33.56	-32.64			
7529D	110				-32.92	-32.16	-31.56			
7529N	114				-33.32	-32.40	-31.60			
7529L	118				-32.96	-32.04	-31.28			
7529B	122				-31.68	-30.84	-30.12			
7529A	133				-35.72	-34.52	-33.60			

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-10.48	-10.40	-10.36	-14.36	-14.24	-14.20	-19.72	-19.48	-19.44
7527A	11	-10.08	-10.00	- 9.96	-13.92	-13.84	-13.76	-19.28	-19.04	-18.96
7528E	16	-10.52	-10.44	-10.36	-14.40	-14.28	-14.20	-19.76	-19.56	-19.44
7528G	21	-10.44	-10.36	-10.32	-14.32	-14.20	-14.16	-19.68	-19.48	-19.40
7527B	22	- 9.56	- 9.48	- 9.44	-13.36	-13.24	-13.20	-18.60	-18.40	-18.32
7528J	28	-10.36	-10.28	-10.20	-14.24	-14.08	-14.00	-19.60	-19.36	-19.28
7528H	48	- 9.76	- 9.68	- 9.64	-13.60	-13.48	-13.40	-18.84	-18.68	-18.60
7528K	50	-10.36	-10.28	-10.28	-14.28	-14.16	-14.08	-19.64	-19.44	-19.36
7527A	51	-10.52	-10.48	-10.44	-14.44	-14.32	-14.28	-19.80	-19.60	-19.52
7527K	53	- 9.44	- 9.40	- 9.36	-13.24	-13.16	-13.08	-18.48	-18.32	-18.24
7527E	58	-10.56	-10.48	-10.44	-14.48	-14.36	-14.32	-19.84	-19.64	-19.60
7527J	66	-10.16	-10.08	-10.04	-14.08	-14.00	-13.92	-19.48	-19.28	-19.16
7527H	70	-10.32	-10.28	-10.16	-14.20	-14.04	-14.00	-19.52	-19.32	-19.24
7527H	74	-10.40	-10.32	-10.32	-14.28	-14.20	-14.12	-19.64	-19.44	-19.36
7527E	76	- 9.88	- 9.80	- 9.72	-13.68	-13.56	-13.52	-16.36	-17.08	-17.68
7525B	81	-10.68	-10.56	-10.52	-14.56	-14.40	-14.32	-19.92	-19.68	-19.60
7527C	87	-10.16	-10.08	-10.08	-14.00	-13.92	-13.88	-19.32	-19.12	-19.04
7529K	89	-10.08	-10.04	- 9.96	-13.96	-13.84	-13.76	-19.28	-19.04	-18.96
7529B	94	-10.48	-10.40	-10.36	-14.36	-14.28	-14.20	-19.76	-19.52	-19.44
7529H	98	- 9.56	- 9.52	- 9.48	-13.40	-13.28	-13.24	-18.68	-18.48	-18.40
REJECT 7529D	110	-10.40	-10.32	- .28	-14.28	-14.16	- .40	-19.64	-19.40	- .04
7529N	114	-10.64	-10.52	-10.48	-14.52	-14.36	-14.32	-19.84	-19.64	-19.56
7529L	118	- 9.24	- 9.20	- 9.16	-13.04	-12.96	-12.92	-18.32	-18.12	-18.04
7529B	112	-10.36	-10.28	-10.28	-14.28	-14.12	-14.04	-19.60	-19.40	-19.32
7529A	133	-10.16	-10.04	-10.00	-14.00	-13.84	-13.72	-19.28	-19.04	-18.92

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-.48	-.60	-.76	-.80	-.84	-1.00	-1.28	-1.28	-1.28
7527A	11	-.48	-.60	-.80	-.80	-.84	-1.00	-1.28	-1.28	-1.28
7528E	16	-.48	-.60	-.76	-.76	-.80	-.96	-1.24	-1.24	-1.24
7528G	21	-.48	-.64	-.80	-.84	-.88	-1.04	-1.28	-1.32	-1.36
7527B	22	-.44	-.60	-.80	-.76	-.84	-1.04	-1.23	-1.28	-1.28
7528J	28	-.48	-.64	-.80	-.80	-.84	-1.00	-1.28	-1.28	-1.28
7528H	48	-.48	-.60	-.84	-.80	-.80	-1.04	-1.28	-1.28	-1.32
7528K	50	-.48	-.64	-.84	-.84	-.88	-1.04	-1.36	-1.36	-1.36
7527A	51	-.56	-.72	-.92	-.88	-.92	-1.12	-1.44	-1.48	-1.48
7527K	53	-.44	-.60	-.80	-.76	-.80	-1.00	-1.24	-1.28	-1.28
7527E	58	-.52	-.68	-.84	-.84	-.88	-1.04	-1.36	-1.36	-1.36
7527J	66	-.48	-.72	-.84	-.80	-.92	-1.04	-1.28	-1.32	-1.36
7527H	70	-.56	-.72	-.88	-.88	-.92	-1.12	-1.40	-1.44	-1.44
7527H	74	-.52	-.68	-.84	-.88	-.88	-1.08	-1.40	-1.40	-1.40
7527E	76	-.48	-.64	-.80	-.76	-.84	-1.04	-1.28	-1.28	-1.28
7525B	81	-.52	-.64	-.80	-.84	-.84	-1.04	-1.28	-1.32	-1.36
7527C	87	-.48	-.60	-.76	-.80	-.80	-1.00	-1.28	-1.28	-1.36
7529K	89	-.48	-.60	-.80	-.80	-.84	-1.04	-1.28	-1.28	-1.32
7529B	94	-.52	-.64	-.80	-.84	-.88	-1.04	-1.36	-1.36	-1.36
7529H	98	-.48	-.64	-.84	-.76	-.84	-1.04	-1.28	-1.28	-1.32
7529D	110	-.52	-.64	-.08	-.84	-.88	-.08	-1.36	-1.36	-.00
7529N	114	-.52	-.64	-.84	-.84	-.88	-1.04	-1.36	-1.36	-1.36
7529L	118	-.48	-.64	-.88	-.80	-.88	-1.08	-1.36	-1.36	-1.40
7529B	112	-.52	-.64	-.84	-.84	-.88	-1.04	-1.36	-1.36	-1.36
7529A	133	-.48	-.60	-.76	-.76	-.80	-.96	-1.24	-1.24	-1.24

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-24-76

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-10.52	-10.44	-10.36	-14.44	-14.28	-14.20	-19.76	-19.56	-19.44
7527A	11	- 9.92	- 9.84	- 9.80	-13.76	-13.64	-13.56	-19.04	-18.84	-18.76
7528E	16	-10.52	-10.44	-10.36	-14.40	-14.28	-14.20	-19.76	-19.56	-19.44
7528G	21	-10.40	-10.32	-10.28	-14.32	-14.20	-14.08	-19.64	-19.44	-19.36
7527B	22	- 9.60	- 9.52	- 9.48	-13.40	-13.32	-13.24	-18.68	-18.48	-18.40
7528J	28	-10.32	-10.28	-10.16	-14.20	-14.04	-14.00	-19.48	-19.32	-19.20
7528H	48	- 9.80	- 9.72	- 9.68	-13.64	-13.52	-13.44	-18.92	-18.76	-18.64
7528K	50	-10.16	-10.08	-10.04	-14.04	-13.92	-13.88	-19.36	-19.20	-19.12
7527A	51	-10.04	-10.00	- 9.92	-13.88	-13.76	-13.72	-19.12	-18.96	-18.88
7527K	53	- 9.44	- 9.36	- 9.32	-13.24	-13.12	-13.08	-18.48	-18.32	-18.20
7527E	58	-10.44	-10.32	-10.32	-14.32	-14.20	-14.16	-19.64	-19.48	-19.40
7527J	66	-10.04	-10.00	- 9.92	-13.96	-13.84	-13.76	-19.32	-19.12	-19.00
7527H	70	-10.44	-10.36	-10.32	-14.32	-14.04	-14.16	-19.64	-19.48	-19.40
7527H	74	-10.44	-10.36	-10.32	-14.32	-14.20	-14.16	-19.64	-19.48	-19.40
7527E	76	-10.08	-10.00	- 9.92	-13.92	-13.80	-13.72	-19.16	-19.00	-18.88
7525B	81	-10.64	-10.52	-10.48	-14.52	-14.40	-14.32	-19.84	-19.64	-19.56
7527C	87	-10.16	-10.08	-10.04	-14.00	-13.92	-13.84	-19.28	-19.12	-19.04
7529K	89	-10.16	-10.04	-10.04	-14.00	-13.88	-13.80	-19.32	-19.12	-19.00
7529B	94	-10.44	-10.36	-10.28	-14.32	-14.20	-14.08	-19.64	-19.44	-19.32
7529H	98	- 9.72	- 9.60	- 9.56	-13.56	-13.40	-13.36	-18.80	-18.64	-18.52
7529D	110	-10.44	-10.36	-10.28	-14.32	-14.20	-14.08	-19.64	-19.44	-19.36
7529N	114	-10.56	-10.48	-10.44	-14.48	-14.32	-14.32	-19.76	-19.56	-19.56
7529L	118	- 9.32	- 9.24	- 9.20	-13.12	-13.04	-12.92	-18.36	-18.20	-18.12
7529B	112	-10.36	-10.28	-10.28	-14.28	-14.08	-14.04	-19.60	-19.40	-19.28
7529A	133	-10.12	-10.04	- 9.96	-13.96	-13.84	-13.72	-19.20	-19.00	-18.92

TEST LIMITS =-8.0V to VDD

LP (TERMINAL 12) -SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-.24	-.40	-.40	-.40	-.48	-.52	-.60	-.64	-.64
7527A	11	-.24	-.40	-.44	-.40	-.48	-.52	-.60	-.64	-.64
7528E	16	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.60
7528G	21	-.28	-.40	-.44	-.44	-.52	-.52	-.64	-.64	-.68
7527B	22	-.24	-.44	-.44	-.40	-.52	-.52	-.60	-.64	-.68
7528J	28	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7528H	48	-.24	-.44	-.44	-.40	-.52	-.52	-.60	-.64	-.68
7528K	50	-.24	-.44	-.44	-.40	-.52	-.52	-.60	-.64	-.68
7527A	51	-.24	-.44	-.44	-.44	-.56	-.56	-.68	-.72	-.72
7527K	53	-.24	-.40	-.44	-.40	-.48	-.48	-.60	-.64	-.64
7527E	58	-.28	-.44	-.44	-.44	-.52	-.52	-.64	-.68	-.68
7527J	66	-.24	-.44	-.44	-.40	-.52	-.52	-.60	-.64	-.64
7527H	70	-.28	-.44	-.44	-.44	-.56	-.56	-.72	-.72	-.76
7527H	74	-.28	-.44	-.44	-.44	-.56	-.56	-.68	-.72	-.72
7527E	76	-.24	-.44	-.44	-.40	-.52	-.52	-.64	-.64	-.68
7525B	81	-.24	-.40	-.44	-.40	-.52	-.52	-.64	-.64	-.68
7527C	87	-.28	-.40	-.40	-.44	-.48	-.52	-.60	-.64	-.64
7529K	89	-.24	-.40	-.40	-.40	-.48	-.52	-.64	-.64	-.64
7529B	94	-.24	-.40	-.40	-.40	-.48	-.52	-.64	-.64	-.68
7529H	98	-.24	-.40	-.44	-.40	-.48	-.52	-.60	-.64	-.64
7529D	110	-.28	-.44	-.44	-.44	-.52	-.52	-.64	-.68	-.72
7529N	114	-.28	-.40	-.44	-.44	-.52	-.52	-.64	-.64	-.68
7529L	118	-.24	-.44	-.44	-.40	-.56	-.56	-.64	-.68	-.72
7529B	112	-.24	-.44	-.44	-.40	-.52	-.52	-.64	-.64	-.68
7529A	133	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.60

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M - SUBGROUP A2,A3,A4 COLLINS DIVISIONS DATE 7-24-76
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-34.24	-33.12	-32.16			
7527A	11				-33.96	-33.12	-32.48			
7528E	16				-31.24	-30.36	-29.68			
7528G	21				-33.20	-32.44	-31.68			
7527B	22				-32.36	-31.60	-32.00			
7528J	28				-35.72	-34.68	-33.84			
7528H	48				-33.20	-32.28	-31.48			
7528K	50				-36.60	-35.48	-34.64			
7527A	51				-34.48	-33.64	-32.96			
7527K	53				-33.04	-32.28	-31.76			
7527E	58				-35.56	-34.56	-33.84			
7527J	66				-35.56	-34.84	-34.20			
7527H	70				-34.92	-34.08	-33.40			
7527H	74				-36.80	-35.80	-35.00			
7527E	76				-35.48	-34.56	-33.84			
7525B	81				-36.28	-35.20	-34.44			
7527C	87				-36.08	-35.00	-34.00			
7529K	89				-37.56	-36.24	-35.16			
7529B	94				-33.24	-32.44	-31.68			
7529H	98				-36.80	-35.68	-34.72			
7529D	110				-34.72	-33.80	-33.12			
7529N	114				-35.92	-34.88	-34.04			
7529L	118				-32.44	-31.60	-30.88			
7529B	122				-32.88	-32.00	-31.28			
7529A	133				-36.20	-35.04	-34.04			

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14) SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-10.64	-10.52	-10.48	-14.52	-14.36	-14.32	-19.84	-19.64	-19.56
7527A	11	- 9.88	- 9.80	- 9.76	-13.72	-13.56	-13.52	-19.00	-18.76	-18.68
7528E	16	-10.48	-10.36	-10.32	-14.36	-14.20	-14.16	-19.72	-19.48	-19.40
7528G	21	-10.60	-10.48	-10.44	-14.52	-14.36	-14.32	-19.88	-19.68	-19.60
7527B	22	- 9.80	- 9.72	- 9.68	-13.68	-13.56	-13.44	-18.96	-18.76	-18.68
7528J	28	-10.32	-10.16	-10.16	-14.20	-14.00	-13.96	-19.48	-19.28	-19.16
7528H	48	- 9.88	- 9.80	- 9.72	-13.72	-13.60	-13.56	-19.04	-18.84	-18.76
7528K	50	-10.08	-10.04	-10.00	-14.00	-13.88	-13.84	-19.32	-19.12	-19.04
7527A	51	-10.16	-10.08	-10.04	-14.00	-13.88	-13.84	-19.28	-19.12	-19.00
7527K	53	- 9.44	- 9.36	- 9.32	-13.24	-13.12	-13.04	-18.48	-18.32	-18.20
7527E	58	-10.32	-10.20	-10.16	-14.20	-14.04	-14.00	-19.48	-19.32	-19.20
7527J	66	-10.00	- 9.88	- 9.84	-13.88	-13.72	-13.64	-19.16	-18.96	-18.84
7527H	70	-10.36	-10.28	-10.28	-14.28	-14.16	-14.04	-19.60	-19.40	-19.32
7527H	74	-10.44	-10.36	-10.32	-14.36	-14.20	-14.16	-19.68	-19.48	-19.44
7527E	76	-10.04	- 9.96	- 9.88	-13.92	-13.76	-13.68	-19.16	-18.96	-18.84
7525B	81	-10.64	-10.52	-10.48	-14.52	-14.36	-14.32	-19.84	-19.64	-19.52
7527C	87	-10.28	-10.12	-10.08	-14.04	-13.92	-13.88	-19.32	-19.16	-19.04
7529K	89	-10.16	-10.08	-10.04	-14.04	-13.88	-13.84	-19.32	-19.12	-19.04
7529B	94	-10.08	-10.00	- 9.92	-13.92	-13.80	-13.72	-19.16	-19.00	-18.88
7529H	98	- 9.96	- 9.84	- 9.80	-13.84	-13.68	-13.64	-19.16	-18.96	-18.84
7529D	110	-10.16	-10.04	-10.00	-14.00	-13.88	-13.76	-19.28	-19.04	-18.96
7529N	114	-10.36	-10.28	-10.20	-14.20	-14.08	-14.00	-19.48	-19.32	-19.20
7529L	118	- 9.76	- 9.68	- 9.60	-13.64	-13.52	-13.44	-18.96	-18.76	-18.68
7529B	112	-10.36	-10.28	-10.16	-14.24	-14.08	-14.00	-19.56	-19.36	-19.28
7529A	133	-10.12	-10.04	- 9.96	-14.00	-13.84	-13.72	-19.20	-19.00	-18.92

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4	-.68	-.72	-.72	-.84	-.88	-.88	-1.00	-1.08	-1.08
7527A	11	-.72	-.72	-.72	-.84	-.88	-.88	-1.00	-1.08	-1.08
7528E	16	-.64	-.64	-.68	-.76	-.80	-.84	-.92	-1.04	-1.04
7528G	21	-.72	-.72	-.76	-.84	-.88	-.88	-1.04	-1.08	-1.12
7527B	22	-.76	-.76	-.76	-.88	-.88	-.92	-1.04	-1.12	-1.12
7528J	28	-.68	-.72	-.72	-.80	-.88	-.88	-.96	-1.08	-1.08
7528H	48	-.72	-.72	-.76	-.84	-.88	-.88	-1.00	-1.08	-1.12
7528K	50	-.72	-.72	-.76	-.84	-.88	-.88	-1.04	-1.08	-1.12
7527A	51	-.72	-.76	-.76	-.88	-.92	-.92	-1.08	-1.12	-1.20
7527K	53	-.72	-.72	-.76	-.84	-.88	-.88	-.96	-1.08	-1.08
7527E	58	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.08
7527J	66	-.72	-.72	-.72	-.84	-.88	-.88	-1.00	-1.08	-1.08
7527H	70	-.76	-.76	-.76	-.88	-.92	-.92	-1.08	-1.12	-1.20
7527H	74	-.72	-.76	-.76	-.88	-.92	-.92	-1.08	-1.12	-1.16
7527E	76	-.72	-.72	-.76	-.84	-.88	-.88	-1.04	-1.08	-1.12
7525B	81	-.68	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.08
7527C	87	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.12
7529K	89	-.68	-.72	-.72	-.80	-.88	-.88	-1.00	-1.08	-1.08
7529B	94	-.68	-.72	-.72	-.80	-.84	-.88	-.96	-1.04	-1.08
7529H	98	-.72	-.72	-.76	-.84	-.88	-.88	-1.00	-1.08	-1.08
7529D	110	-.68	-.72	-.72	-.80	-.88	-.88	-.96	-1.08	-1.08
7529N	114	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.12
7529L	118	-.76	-.80	-.80	-.88	-.92	-.96	-1.08	-1.16	-1.20
7529B	122	-.72	-.72	-.76	-.84	-.88	-.88	-1.04	-1.08	-1.12
7529A	133	-.64	-.72	-.72	-.76	-.84	-.88	-.96	-1.04	-1.08

TEST LIMITS = 0.0V to - 2.0V

FP (TERMINAL 15), V15M-SUBGROUP A2, A3, A4
SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-24-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-36.04	-34.84	-33.80			
7527A	11				-34.36	-33.52	-32.84			
7528E	16				-32.24	-31.36	-30.64			
7528G	21				-34.24	-33.36	-32.56			
7527B	22				-33.76	-32.96	-32.36			
7528J	28				-35.60	-34.48	-33.60			
7528H	48				-36.12	-35.04	-34.16			
7528K	50				-37.08	-36.00	-35.08			
7527A	51				-34.56	-33.72	-33.08			
7527K	53				-32.88	-32.12	-31.60			
7527E	58				-35.32	-34.36	-33.56			
7527J	66				-40.24	-39.20	-38.36			
7527H	70				-36.92	-35.96	-35.16			
7527H	74				-35.60	-34.68	-33.92			
7527E	76				-34.12	-33.24	-32.56			
7525B	81				-35.12	-34.16	-33.40			
7527C	87				-36.96	-35.84	-34.84			
7529K	89				-35.32	-34.24	-33.36			
7529B	94				-36.84	-32.92	-32.16			
7529H	98				-36.76	-35.64	-34.60			
7529D	110				-33.52	-32.60	-31.96			
7529N	114				-36.44	-35.36	-34.40			
7529L	118				-31.84	-31.08	-30.36			
7529B	122				-32.56	-31.76	-31.00			
7529A	133				-37.16	-35.96	-34.96			

TEST LIMITS = -28.0V minimum

Q6 (TERMINAL 16) - SUBGROUP A2 ,A3, A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-12.72	- 7.84	- 7.60	-14.00	-12.72	-11.76
7527A	11				-12.24	- 7.20	- 6.96	-13.36	-11.36	-11.08
7528E	16				-12.40	- 7.80	- 7.52	-13.72	-12.00	-11.68
7528G	21				-12.44	- 6.72	- 7.52	-13.92	-12.04	-11.72
7527B	22				-11.36	- 6.72	- 6.52	-12.52	-10.84	-10.52
7528J	28				- 7.60	- 7.24	- 6.96	-12.44	-11.32	-11.00
7528H	48				- 9.96	- 6.68	- 6.48	-12.08	-10.84	-10.52
7528K	50				-11.56	- 6.96	- 6.76	-12.84	-11.12	-10.80
7527A	51				-12.08	- 7.16	- 6.92	-13.16	-11.28	-10.92
7527K	53				-10.76	- 6.32	- 6.12	-11.92	-10.44	-10.16
7527E	58				-11.92	- 7.20	- 6.96	-13.16	-11.36	-11.04
7527J	66				-11.00	- 6.52	- 6.24	-12.12	-10.60	-10.28
7527H	70				-12.00	- 7.04	- 6.84	-13.08	-11.16	-10.84
7527H	74				-12.32	- 7.40	- 7.16	-13.56	-11.64	-11.28
7527E	76				-11.96	- 6.96	- 6.68	-12.92	-11.00	-10.68
7525B	81				-12.60	- 7.76	- 7.48	-13.88	-11.92	-11.56
7527C	87				- 7.48	- 7.24	- 7.00	-11.72	-11.28	-11.00
7529K	89				- 8.64	- 7.40	- 7.16	-13.08	-11.60	-11.28
7529B	94				-10.44	- 7.77	- 7.44	-13.56	-11.96	-11.60
7529H	98				- 8.92	- 7.80	- 6.56	-12.40	-11.00	-10.64
7529D	110				- 7.76	- 7.32	- 7.08	-12.48	-11.44	-11.12
7529N	114				-11.88	- 7.56	- 7.28	-13.40	-11.72	-11.36
7529L	118				-10.28	- 6.20	- 6.00	-11.48	-10.28	- 9.88
7529B	112				-12.36	- 7.64	- 7.36	-13.72	-11.92	-11.48
7529A	133				- 7.88	- 7.20	- 6.92	-12.40	-11.32	-10.96

TEST LIMITS = -4.0 to VDD

Q6 (TERMINAL 16) - SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-24-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7527C	4				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7527A	11									
7528E	16									
7528G	21									
7527B	22									
7528J	28									
7528H	48									
7528K	50									
7527A	51									
7527K	53									
7527E	58									
7527J	66									
7527H	70									
7527H	74									
7527E	76									
7525B	81									
7527C	87									
7529K	89									
7529B	94									
7529H	98									
7529D	110									
7529N	114									
7529L	118									
7529B	112									
7529A	133				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B1
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2								-5.19	
7528D	8								-4.70	
7527C	13								-4.74	
7528G	20								-5.07	
7528C	25								-4.94	
7527C	30								-4.91	
7528C	33								-5.13	
7527B	36								-4.57	
7528K	49								-4.86	
7527H	54								-5.27	

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-17.04			-21.56			-27.64	
7528D	8		-17.04			-21.56			-27.64	
7527C	13		-17.04			-21.56			-27.64	
7528G	20		-17.04			-21.56			-27.64	
7528C	25		-17.04			-21.56			-27.64	
7527C	30		-17.04			-21.56			-27.64	
7528C	33		-17.04			-21.56			-27.64	
7527B	36		-17.04			-21.56			-27.64	
7528H	49		-17.04			-21.56			-27.64	
7527H	54		-17.00			-21.56			-27.64	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-.28			-.24			-.28	
7528D	8		-.28			-.24			-.28	
7527C	13		-.24			-.24			-.28	
7528G	20		-.24			-.24			-.24	
7528C	25		-.28			-.28			-.28	
7527C	30		-.24			-.24			-.28	
7528C	33		-.24			-.24			-.28	
7527B	36		-.28			-.28			-.28	
7528K	49		-.28			-.28			-.28	
7527H	54		-.28			-.24			-.24	

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) -SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-17.00			-21.52			-27.60	
7528D	8		-17.00			-21.52			-27.64	
7527C	13		-17.00			-21.52			-27.60	
7528G	20		-17.00			-21.52			-27.60	
7528C	25		-17.00			-21.52			-27.60	
7527C	30		-17.00			-21.52			-27.60	
7528C	33		-17.00			-21.52			-27.60	
7527B	36		-17.00			-21.52			-27.60	
7528K	49		-17.00			-21.52			-27.60	
7527H	54		-17.00			-21.52			-27.60	

TEST LIMITS =-16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-2.48			-2.48			-2.76	
7528D	8		-2.48			-2.48			-2.68	
7527C	13		-2.56			-2.52			-2.72	
7528G	20		-2.36			-2.40			-2.68	
7528C	25		-2.52			-2.52			-2.76	
7527C	30		-2.40			-2.44			-2.68	
7528C	33		-2.44			-2.48			-2.76	
7527B	36		-2.52			-2.52			-2.72	
7528K	49		-2.76			-2.64			-2.76	
7527H	54		-2.48			-2.48			-2.68	

TEST LIMITS = 0.0V to -10.0V

appendix c

G14 (TERMINAL 5), V5M - SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-32.56				
7528D	8					-32.92				
7527C	13					-31.32				
7528G	20					-33.72				
7528C	25					-33.12				
7527C	30					-32.92				
7528C	33					-34.00				
7527B	36					-32.44				
7528K	49					-30.96				
7527H	54					-36.12				

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-21.56			-27.64	
7528D	8					-21.56			-27.64	
7527C	13					-21.56			-27.64	
7528G	20					-21.56			-27.64	
7528C	25					-21.56			-27.64	
7527C	30					-21.56			-27.64	
7528C	33					-21.56			-27.64	
7527B	36					-21.56			-27.64	
7528K	49					-21.56			-27.64	
7527H	54					-21.56			-27.64	

TEST LIMITS = -21.4 to VDD

Q4 (TERMINAL 6) SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-.76			-.72	
7528D	8					-.80			-.76	
7527C	13					-.72			-.68	
7528G	20					-.76			-.72	
7528C	25					-.84			-.76	
7527C	30					-.76			-.72	
8528C	33					-.76			-.72	
7527B	36					-.84			-.76	
7528K	49					-.88			-.80	
7527H	54					-.88			-.76	

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M -SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 7-28-76
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-36.00				
7528D	8					-33.76				
7527C	13					-32.84				
7528G	20					-31.92				
7528C	25					-33.84				
7527C	30					-32.56				
7528C	33					-33.44				
7527B	36					-33.04				
7528K	49					-33.32				
7527H	54					-34.96				

TEST LIMITS = -28.0V Minimum

appendix c

MON (TERMINAL 9), V9M - SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-35.16				
7528D	8					-34.00				
7527C	13					-32.72				
7528G	20					-30.16				
7528C	25					-34.00				
7527C	30					-35.76				
7528C	33					-34.40				
7527B	36					-34.36				
7528K	49					-32.72				
7527H	54					-35.44				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9) V9P - SUBGROUP B1
SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-76

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					+1.08				
7528D	8					+1.16				
7527C	13					+ .92				
7528G	20					+1.08				
7528C	25					+1.28				
7527C	30					+ .92				
7528C	33					+1.04				
7527B	36					+1.04				
7528K	49					+1.08				
7527H	54					+1.20				

TEST LIMITS = 0.0V to +6.0V

CL (TERMINAL 10), V10M-SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-76

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-35.12				
7528D	8					-31.60				
7527C	13					-33.08				
7528G	20					-30.64				
7528C	25					-32.76				
7527C	30					-34.64				
7528C	33					-33.52				
7527B	36					-34.52				
7528K	49					-33.20				
7527H	54					-33.56				

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11)- SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-10.28			-14.08			-19.36	
7528D	8		-10.52			-14.36			-19.68	
7527C	13		-10.20			-14.00			-19.28	
7528G	20		-10.32			-14.16			-19.40	
7528C	25		-10.12			-13.92			-19.20	
7527C	30		-10.20			-14.00			-19.28	
7528C	33		-10.28			-14.04			-19.28	
7527B	36		-10.04			-13.84			-19.04	
7528K	49		-10.00			-13.84			-19.12	
7527H	54		-10.04			-13.88			-19.12	

TEST LIMITS = -8.0V tc VDD

SP (TERMINAL 11) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-.68			-.88			-1.36	
7528D	8		-.64			-.84			-1.28	
7527C	13		-.60			-.80			-1.28	
7528G	20		-.60			-.80			-1.24	
7528C	25		-.64			-.88			-1.36	
7527C	30		-.60			-.84			-1.36	
7528C	33		-.64			-.84			-1.28	
7527B	36		-.60			-.80			-1.24	
7528K	49		-.64			-.84			-1.32	
7527H	54		-.68			-.88			-1.40	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-28-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-10.32			-14.16			-19.36	
7528D	8		-10.04			-13.84			-19.00	
7527C	13		-10.04			-13.80			-19.28	
7528G	20		-10.28			-14.04			-19.32	
7528C	25		- 9.96			-13.76			-19.00	
7527C	30		-10.28			-14.04			-19.28	
7528C	33		-10.48			-14.30			-19.60	
7527B	36		-10.04			-13.80			-19.00	
7528K	49		-10.04			-13.88			-19.12	
7527H	54		-10.16			-14.00			-19.20	

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-76
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-.44			-.52			-.68	
7528D	8		-.40			-.48			-.60	
7527C	13		-.40			-.48			-.60	
7528G	20		-.40			-.48			-.60	
7528C	25		-.44			-.52			-.64	
7527C	30		-.40			-.48			-.64	
7528C	33		-.40			-.52			-.68	
7527B	36		-.40			-.48			-.60	
7528K	49		-.44			-.52			-.68	
7527H	54		-.44			-.56			-.72	

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M -SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-33.24				
7528D	8					-32.88				
7527C	13					-35.42				
7528G	20					-33.28				
7528C	25					-31.92				
7527C	30					-34.44				
7528C	33					-31.60				
7527B	36					-35.28				
7528K	49					-31.60				
7527H	54					-34.84				

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14)- SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-10.44			-14.28			-19.56	
7528D	8		-10.20			-14.04			-19.28	
7527C	13		- 9.88			-13.68			-18.84	
7528G	20		-10.16			-13.96			-19.16	
7528C	25		-10.00			-13.80			-19.00	
7527C	30		-10.32			-14.16			-19.40	
7528C	33		-10.48			-14.32			-19.60	
7527B	36		- 9.96			-13.72			-18.92	
7528K	49		- 9.84			-13.64			-18.88	
7527H	54		-10.08			-13.92			-19.16	

TEST LIMITS = 0.0V to -2.0V

G32 (TERMINAL 14) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-28-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2		-.72			-.88			-1.08	
7528D	8		-.68			-.84			-1.04	
7527C	13		-.68			-.84			-1.04	
7528G	20		-.68			-.84			-1.04	
7528C	25		-.72			-.88			-1.08	
7527C	30		-.72			-.88			-1.08	
7528C	33		-.68			-.84			-1.08	
7527B	36		-.72			-.84			-1.04	
7528K	49		-.72			-.88			-1.08	
7527H	54		-.76			-.92			-1.12	

TEST LIMITS = -8.0V to VDD

FP (TERMINAL 15), V15M - SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-25-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-33.68				
7528D	8					-33.84				
7527C	13					-34.96				
7528G	20					-31.84				
7528C	25					-33.92				
7527C	30					-33.12				
7528C	33					-32.80				
7527B	36					-34.48				
7528K	49					-32.48				
7527H	54					-35.92				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 7-25-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-1.44			-11.64	
7528D	8					-7.28			-11.44	
7527C	13					-7.60			-12.56	
7528G	20					-7.60			-11.84	
7528C	25					-7.28			-11.44	
7527C	30					-8.08			-13.16	
7528C	33					-4.96			-12.16	
7527B	36					-4.12			-11.00	
7528K	49					-7.12			-11.32	
7527H	54					-7.44			-11.64	

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 7-25-76

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	2					-0.00			-0.00	
7528D	8					↑			↑	
7527C	13					↑			↑	
7528G	20					↑			↑	
7528C	25					↑			↑	
7527C	30					↑			↑	
7528C	33					↑			↑	
7527B	36					↑			↑	
7528K	49					↓			↓	
7527H	54					-0.00			-0.00	

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B2
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6								-4.60	
7528D	10								-5.35	
7528C	15								-4.51	
7528H	23								-4.86	
7528C	27								-4.70	
7528J	29								-4.96	
7527D	35								-4.89	
7527D	39								-5.03	
7527K	44								-4.53	
7527E	52								-5.05	

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-17.00			-21.48			-27.56	
7528D	10		-17.00			-21.48			-27.56	
7528C	15		-17.00			-21.48			-27.56	
7528H	23		-17.00			-21.48			-27.56	
7528C	27		-17.00			-21.48			-27.56	
7528J	29		-17.00			-21.48			-27.56	
7527D	35		-17.00			-21.48			-27.56	
7527D	39		-17.00			-21.48			-27.56	
7527K	44		-17.00			-21.48			-27.56	
7527E	52		-17.00			-21.48			-27.56	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) -SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-.28			-.28			-.28	
7528D	10		-.28			-.28			-.28	
7528C	15		-.28			-.28			-.28	
7528H	23		-.28			-.28			-.28	
7528C	27		-.28			-.28			-.28	
7528J	29		-.28			-.28			-.28	
7527D	35		-.28			-.28			-.28	
7527D	39		-.28			-.28			-.28	
7527K	44		-.28			-.28			-.28	
7527E	52		-.28			-.28			-.28	

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-76
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-17.00			-21.56			-27.60	
7528D	10		-17.00			-21.52			-27.60	
7528C	15		-17.00			-21.56			-27.60	
7528H	23		-17.00			-21.56			-27.60	
7528C	27		-17.00			-21.56			-27.60	
7528J	29		-17.00			-21.56			-27.60	
7527D	35		-17.00			-21.56			-27.60	
7527D	39		-17.00			-21.56			-27.60	
7527K	44		-17.04			-21.56			-27.60	
7527E	52		-17.00			-21.52			-27.60	

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-2.52			-2.52			-2.72	
7528D	10		-2.48			-2.48			-2.72	
7528C	15		-2.64			-2.60			-2.80	
7528H	23		-2.44			-2.48			-2.68	
7528C	27		-2.40			-2.48			-2.68	
7528J	29		-2.48			-2.48			-2.68	
7527D	35		-2.72			-2.68			-2.84	
7527D	39		-2.68			-2.68			-2.84	
7527K	44		-2.80			-2.68			-2.84	
7527E	52		-2.60			-2.60			-2.80	

TEST LIMITS = 0.0V to -10.0V

G14 (TERMINAL 5), V5M - SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-31.16				
7528D	10					-34.24				
7528C	15					-33.48				
7528H	23					-30.64				
7528C	27					-33.68				
7528J	29					-32.24				
7527D	35					-33.32				
7527D	39					-33.48				
7527K	44					-31.16				
7527E	52					-32.92				

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) -SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-21.56			-27.64	
7528D	10					-21.56			-27.64	
7528C	15					-21.56			-27.64	
7528H	23					-21.56			-27.64	
7528C	27					-21.56			-27.64	
7528J	29					-21.56			-27.64	
7527D	35					-21.56			-27.64	
7527D	39					-21.56			-27.64	
7527K	44					-21.56			-27.64	
7527E	52					-21.56			-27.64	

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-.76			-.76	
7528D	10					-.76			-.72	
7528C	15					-.84			-.76	
7528H	23					-.72			-.72	
7528C	27					-.76			-.72	
7528J	29					-.76			-.72	
7527D	35					-.76			-.72	
7527D	39					-.80			-.76	
7527K	44					-.84			-.76	
7527E	52					-.76			-.76	

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-31.64				
7528D	10					-32.56				
7528C	15					-35.48				
7528H	23					-32.52				
7528C	27					-31.60				
7528J	29					-33.36				
7527D	35					-31.48				
7527D	39					-33.24				
7527K	44					-31.64				
7527E	52					-32.64				

TEST LIMITS = -28.0V Minimum

appendix c

MON (TERMINAL 9), V9M- SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-31.72				
7528D	10					-33.20				
7528C	15					-31.96				
7528H	23					-32.40				
7528C	27					-32.88				
7528J	29					-33.68				
7527D	35					-35.00				
7527D	39					-31.16				
7527K	44					-31.16				
7527E	52					-32.28				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B2
SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					1.08				
7528D	10					1.28				
7528C	15					1.12				
7528H	23					1.04				
7528C	27					1.08				
7528J	29					1.04				
7527D	35					1.04				
7527D	39					1.08				
7527K	44					1.32				
7527E	52					1.04				

TEST LIMITS = 0.0V to +6.0V

appendix c

CL (TERMINAL 10), V10M - SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10μA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-33.40				
7528D	10					-36.24				
7528C	15					-32.88				
7528H	23					-31.92				
7528C	27					-33.20				
7528J	29					-34.08				
7527D	35					-36.08				
7527D	39					-31.32				
7527K	44					-31.36				
7527E	52					-32.56				

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-10.04			-13.88			-19.04	
7528D	10		-10.04			-13.84			-19.04	
7528C	15		- 9.96			-13.72			-18.96	
7528H	23		-10.36			-14.20			-19.44	
7528C	27		-10.16			-13.92			-19.12	
7528J	29		- 9.92			-13.68			-18.88	
7527D	35		-10.04			-13.80			-19.00	
7527D	39		-10.28			-14.04			-19.32	
7527K	44		- 9.76			-13.56			-18.76	
7527E	52		- 9.88			-13.68			-18.88	

TEST LIMITS =-8.0V to VDD

SP (TERMINAL 11) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-.60			-.80			-1.24	
7528D	10		-.72			-.88			-1.44	
7528C	15		-.60			-.80			-1.24	
7528H	23		-.60			-.80			-1.24	
7528C	27		-.60			-.80			-1.24	
7528J	29		-.64			-.84			-1.28	
7527D	35		-.64			-.88			-1.36	
7527D	39		-.68			-.88			-1.40	
7527K	44		-.64			-.84			-1.36	
7527E	52		-.68			-.88			-1.36	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-10.28			-14.08			-19.36	
7528D	10		-10.08			-13.88			-19.12	
7528C	15		- 9.96			-13.72			-18.92	
7528H	23		-10.16			-14.00			-19.24	
7528C	27		-10.16			-14.00			-19.16	
7528J	29		-10.00			-13.76			-18.96	
7527D	35		-10.00			-13.76			-18.96	
7527D	39		-10.28			-14.04			-19.32	
7527K	44		- 9.72			-13.52			-18.68	
7527E	52		-10.08			-13.92			-19.12	

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-.40			-.48			-.64	
7528D	10		-.44			-.56			-.72	
7528C	15		-.40			-.48			-.60	
7528H	23		-.40			-.48			-.60	
7528C	27		-.40			-.48			-.60	
7528J	29		-.44			-.52			-.64	
7527D	35		-.40			-.52			-.64	
7527D	39		-.44			-.56			-.72	
7527K	44		-.44			-.52			-.64	
7527E	52		-.44			-.56			-.68	

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-31.52				
7528D	10					-32.88				
7528C	15					-35.32				
7528H	23					-32.12				
7528C	27					-34.40				
7528J	29					-32.76				
7527D	35					-32.28				
7527D	39					-34.00				
7527K	44					-31.56				
7527E	52					-32.40				

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14)- SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-10.04			-13.88			-19.04	
7528D	10		-10.28			-14.09			-19.32	
7528C	15		- 9.84			-13.64			-18.80	
7528H	23		-10.28			-14.08			-19.32	
7528C	27		-10.20			-14.00			-19.28	
7528J	29		-10.48			-14.32			-19.60	
7527D	35		-10.08			-13.88			-19.04	
7527D	39		-10.00			-13.84			-19.04	
7527K	44		- 9.72			-13.52			-18.68	
7527E	52		-10.16			-13.96			-19.20	

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)- SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6		-.68			-.84			-1.04	
7528D	10		-.76			-.92			-1.20	
7528C	15		-.68			-.84			-1.04	
7528H	23		-.68			-.84			-1.04	
7528C	27		-.68			-.84			-1.04	
7528J	29		-.72			-.88			-1.08	
7527D	35		-.72			-.88			-1.08	
7527D	39		-.76			-.88			-1.12	
7527K	44		-.76			-.88			-1.08	
7527E	52		-.76			-.88			-1.12	

TEST LIMITS = 0.0V to -2.0V

FP (TERMINAL 15), V15M - SUBGROUP B2
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-19-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-32.64				
7528D	10					-34.76				
7528C	15					-33.40				
7528H	23					-33.32				
7528C	27					-33.56				
7528J	29					-33.52				
7527D	35					-34.04				
7527D	39					-32.24				
7527K	44					-32.20				
7527E	52					-34.48				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) -SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-7.44			-11.60	
7528D	10					-7.44			-11.60	
7528C	15					-7.64			-11.88	
7528H	23					-7.60			-11.80	
7528C	27					-7.68			-11.88	
7528J	29					-7.76			-11.92	
7527D	35					-7.52			-11.68	
7527D	39					-7.28			-11.44	
7527K	44					-6.72			-10.80	
7527E	52					-6.96			-11.12	

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16) -SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-19-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	6					-.04			-.00	
7528D	10					-.00			-.00	
7528C	15									
7528H	23									
7528C	27									
7528J	29									
7527D	35									
7527D	39									
7527K	44									
7527E	52									

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A--SUBGROUP B3
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3								-5.03	
7527D	9								-4.93	
7528A	14								-4.96	
7527C	14								-4.99	
7527A	19								-4.51	
7527B	26								-4.69	
7528H	32								-4.51	
7527A	38								-4.78	
7528C	40								-5.13	
7527B	42								-5.36	

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3)--SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-17.00			-21.48			-27.56	
7527D	9		-17.00			-21.48			-27.56	
7528A	14		-17.00			-21.48			-27.56	
7527C	14		-17.00			-21.48			-27.56	
7527A	19		-17.00			-21.48			-27.56	
7527B	26		-17.00			-21.48			-27.56	
7528H	32		-17.00			-21.48			-27.56	
7527A	38		-17.00			-21.48			-27.56	
7528C	40		-17.00			-21.48			-27.56	
7527B	42		-17.00			-21.48			-27.56	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-.24			-.24			-.24	
7527D	9		-.28			-.28			-.28	
7528A	14		-.28			-.28			-.28	
7527C	14		-.24			-.24			-.24	
7527A	19		-.28			-.28			-.28	
7527B	26		-.28			-.28			-.28	
7528H	32		-.28			-.28			-.28	
7527A	38		-.28			-.28			-.28	
7528C	40		-.28			-.28			-.28	
7527B	42		-.28			-.24			-.28	

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B3
SCALER QIITPIIT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-17.00			-21.56			-27.60	
7527D	9		-17.00			-21.56			-27.60	
7528A	14		-17.00			-21.52			-27.60	
7527C	14		-17.00			-21.56			-27.60	
7527A	19		-17.04			-21.56			-27.60	
7527B	26		-17.00			-21.56			-27.60	
7528H	32		-17.00			-21.56			-27.60	
7527A	38		-17.00			-21.56			-27.60	
7528C	40		-17.00			-21.56			-27.60	
7527B	42		-17.00			-21.56			-27.60	

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4)- SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-2.44			-2.48			-2.72	
7527D	9		-2.68			-2.64			-2.80	
7528A	14		-2.52			-2.52			-2.72	
7527C	14		-2.40			-2.40			-2.60	
7527A	19		-2.96			-2.76			-2.84	
7527B	26		-2.60			-2.52			-2.76	
7528H	32		-2.68			-2.56			-2.76	
7527A	38		-2.64			-2.60			-2.80	
7528C	40		-2.48			-2.48			-2.76	
7527B	42		-2.44			-2.44			-2.64	

TEST LIMITS = 0.0V to -10.0V

G14 (TERMINAL 5), V5M -SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
8528C	3					-32.96				
7527D	9					-33.08				
7528A	14					-32.96				
7527C	17					-32.12				
7527A	19					-31.00				
7527B	26					-35.44				
7528H	32					-35.80				
7527A	38					-34.80				
7528C	40					-34.04				
7527B	42					-32.60				

TEST LIMITS \approx -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-21.56			-27.64	
7527D	9					-21.56			-27.64	
7528A	14					-21.56			-27.64	
7527C	14					-21.56			-27.64	
7527A	19					-21.56			-27.64	
7527B	26					-21.56			-27.64	
7528H	32					-21.56			-27.64	
7527A	38					-21.52			-27.64	
7528C	40					-21.52			-27.64	
7527B	42					-21.52			-27.64	

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-.72			-.68	
7527D	9					-.72			-.72	
7528A	14					-.72			-.72	
7527C	14					-.68			-.68	
7527A	19					-.84			-.76	
7527B	26					-.76			-.72	
7528H	32					-.76			-.72	
7527A	38					-.72			-.72	
7528C	40					-.76			-.72	
7527B	42					-.76			-.72	

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B3

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-31.36				
7527D	9					-34.92				
7528A	14					-34.04				
7527C	17					-34.20				
7527A	19					-33.40				
7527B	26					-33.80				
7528H	32					-35.92				
7527A	38					-32.12				
7528C	40					-33.40				
7527B	42					-33.12				

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M -SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-31.32				
7527D	9					-31.64				
7528A	14					-34.36				
7527C	17					-30.80				
7527A	19					-30.44				
7527B	26					-35.20				
7528H	32					-35.16				
7527A	38					-32.24				
7528C	40					-32.84				
7527B	42					-33.80				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B3
SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					1.16				
7527D	9					1.20				
7528A	14					1.16				
7527C	17					1.00				
7527A	19					1.04				
7527B	26					1.16				
7528H	32					1.08				
7527A	36					1.08				
7528C	40					1.36				
7527B	42					1.08				

TEST LIMITS = 0.0V to +6.0V

CL (TERMINAL 10), V10M - SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification					10uA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-31.44				
7527D	9					-34.56				
7528A	14					-34.80				
7527C	17					-34.52				
7527A	19					-31.24				
7527B	26					-34.44				
7528H	32					-35.92				
7527A	38					-32.88				
7528C	40					-33.52				
7527B	42					-34.12				

TEST LIMITS= -28.0V Minimum

SP (TERMINAL 11) -SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 8-18-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-10.40			-14.20			-19.44	
7527D	9		-10.32			-14.12			-19.40	
7528A	14		-10.12			-13.92			-19.12	
7527C	14		-10.00			-13.76			-19.00	
7527A	19		-10.20			-14.04			-19.32	
7527B	26		-10.16			-13.92			-19.16	
7528H	32		- 9.96			-13.72			-18.92	
7527A	38		-10.20			-14.00			-19.28	
7528C	40		-10.52			-14.36			-19.68	
7527B	42		-10.48			-14.36			-19.68	

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-.60			-.84			-1.28	
7527D	9		-.64			-.84			-1.28	
7528A	14		-.64			-.24			-1.36	
7527C	14		-.60			-.76			-1.24	
7527A	19		-.64			-.88			-1.36	
7527B	26		-.60			-.80			-1.24	
7528H	32		-.60			-.80			-1.24	
7527A	38		-.60			-.84			-1.28	
7528C	40		-.64			-.88			-1.36	
7527B	42		-.68			-.88			-1.40	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) -SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-10.16			-13.96			-19.16	
7527D	9		-10.32			-14.16			-19.44	
7528A	14		-10.04			-13.88			-19.08	
7527C	14		-10.32			-14.16			-19.40	
7527A	19		- 9.64			-13.36			-18.52	
7527B	26		-10.16			-13.96			-19.16	
7528H	32		- 9.92			-13.72			-18.88	
7527A	38		-10.16			-14.00			-19.20	
7528C	40		-10.48			-14.32			-19.64	
7527B	42		-10.48			-14.32			-19.64	

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-.40			-.48			-.60	
7527D	9		-.40			-.48			-.64	
7528A	14		-.44			-.52			-.68	
7527C	17		-.40			-.52			-.64	
7527A	19		-.40			-.48			-.64	
7527B	26		-.40			-.48			-.64	
7528H	32		-.40			-.48			-.60	
7527A	38		-.40			-.48			-.64	
7528C	40		-.44			-.52			-.69	
7527B	42		-.44			-.56			-.72	

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M -SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-32.96				
7527D	9					-35.84				
7528A	14					-32.80				
7527C	17					-34.68				
7527A	19					-34.48				
7527B	26					-34.48				
7528H	32					-36.08				
7527A	38					-32.64				
7528C	40					-32.00				
7527B	42					-35.32				

TEST LIMITS = -28.0V Min.

appendix c

G32 (TERMINAL 14)--SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-10.28			-14.00			-19.20	
7527D	9		-10.36			-14.20			-19.44	
7528A	14		- 9.92			-13.72			-18.92	
7527C	14		-10.44			-14.32			-19.60	
7527A	19		- 9.68			-13.44			-18.60	
7527B	26		-10.12			-13.92			-19.12	
7528H	32		- 9.92			-13.68			-18.88	
7527A	38		-10.32			-14.16			-19.40	
7528C	40		-10.48			-14.32			-19.60	
7527B	42		- 9.80			-13.56			-18.76	

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)- SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3		-.68			-.84			-1.08	
7527D	9		-.72			-.88			-1.08	
7528A	14		-.72			-.88			-1.08	
7527C	17		-.72			-.88			-1.08	
7527A	19		-.76			-.88			-1.08	
7527B	26		-.72			-.84			-1.08	
7528H	32		-.68			-.84			-1.04	
7527A	38		-.72			-.88			-1.08	
7528C	40		-.72			-.88			-1.12	
7527B	42		-.76			-.88			-1.08	

TEST LIMITS = 0.0V to -2.0V

appendix c

FP (TERMINAL 15), V15M -SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 8-18-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-33.80				
7527D	9					-33.08				
7528A	14					-32.96				
7527C	17					-32.12				
7527A	19					-31.00				
7527B	26					-35.44				
7528H	32					-35.80				
7527A	38					-34.80				
7528C	40					-34.04				
7527B	42					-32.00				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					-7.76			-12.04	
7527D	9					-7.80			-12.00	
7528A	14					-7.60			-11.84	
7527C	14					-7.56			-11.76	
7527A	19					-6.76			-10.80	
7527B	26					-7.12			-11.20	
7528H	32					-6.96			-11.00	
7527A	38					-7.28			-11.40	
7528C	40					-7.72			-11.92	
7527B	42					-7.32			-11.48	

TEST LIMITS = -4.0V to VDD

appendix c

Q6 (TERMINAL 16)- SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 8-18-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7528C	3					.00			.00	
7527D	9					.00			.00	
7528A	14					.00			-.04	
7527A	19					.00			.00	
7527B	26					.00			.00	
7528H	32					.00			.00	
7527A	38					.00			-.04	
7528C	40					.00			-.04	
7527B	42					.00			-.04	

TEST LIMITS = 0.0V to -0.1V

APPENDIX D

PARAMETRIC RESULTS OF PRODUCTION LOT QUALITY ACCEPTANCE TESTING

appendix d

IDD(TERMINAL 1), 1A - SUBGROUP A2,A3,A4

SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1							-7.40	-5.00	-4.20
7538 K	2							-7.70	-5.20	-4.30
7532 H	3							-8.10	-5.40	-4.60
7538 J	4							-6.90	-4.60	-3.90
7532 A	5							-7.80	-5.30	-4.30
7530 M	6							-7.40	-5.00	-4.20
7530 M	7							-6.90	-4.60	-3.90
7538 B	8							-7.20	-4.90	-4.10
7538 E	9							-7.00	-4.70	-4.00
7538 A	10							-6.70	-4.50	-3.80
7538 N	11							-6.90	-4.70	-3.90
7538 R	12							-6.70	-4.60	-3.80
7538 R	13							-7.30	-5.00	-4.20
7538 H	14							-7.30	-5.00	-4.20
7532 PP	15							-7.60	-5.10	-4.30
7532 KK	16							-7.60	-5.10	-4.30
7530 T	17							-7.30	-4.90	-4.10
7538 C	18							-6.90	-4.60	-3.90
7538 M	19							-7.10	-4.80	-4.10
7529 P	20							-7.70	-5.20	-4.30
7532 DD	21							-7.30	-4.90	-4.10
7532 NN	22							-7.40	-5.00	-4.10
7532 P	23							-7.40	-5.00	-4.10
7532 N	24							-7.50	-5.10	-4.20
7532 Z	25							-7.40	-5.00	-4.20

TEST LIMITS = 2.0 mA to 10.0 mA

appendix d

ARM(TERMINAL 3) - SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL),VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 K	2	-16.96	-16.96	-16.96	-21.52	-21.52	-21.44	-27.52	-27.52	-27.52
7532 H	3	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 J	4	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 A	5	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7530 M	6	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7530 M	7	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 B	8	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 E	9	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 A	10	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 N	11	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 R	12	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 R	13	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 H	14	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 PP	15	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538KK	16	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7530 T	17	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 C	18	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7538 M	19	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7529 P	20	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 DD	21	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 NN	22	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 P	23	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 N	24	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52
7532 N	25	-16.96	-16.96	-16.96	-21.52	-21.52	-21.52	-27.52	-27.52	-27.52

TEST LIMITS =-16.9V to VDD

appendix d

ARM (TERMINAL 3) - SUBGROUP A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-.12	-.24	-.32	-.16	-.24	-.28	-.20	-.28	-.28
7532 K	2	-.16	-.28	-.28	-.20	-.24	-.28	-.20	-.24	-.28
7532 H	3	-.12	-.20	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7538 J	4	-.12	-.24	-.36	-.16	-.24	-.32	-.20	-.28	-.32
7532 A	5	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7530 M	6	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7530 M	7	-.12	-.28	-.32	-.16	-.28	-.32	-.20	-.28	-.32
7538 B	8	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7538 E	9	-.12	-.24	-.32	-.16	-.24	-.28	-.20	-.24	-.28
7538 A	10	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7538 N	11	-.12	-.28	-.36	-.20	-.24	-.32	-.20	-.28	-.32
7538 R	12	-.12	-.24	-.32	-.16	-.24	-.32	-.20	-.28	-.32
7538 R	13	-.16	-.28	-.36	-.20	-.28	-.32	-.24	-.28	-.32
7538 H	14	-.12	-.28	-.32	-.16	-.24	-.28	-.20	-.24	-.28
7532 PP	15	-.12	-.28	-.32	-.16	-.24	-.28	-.20	-.28	-.28
7532 KK	16	-.12	-.20	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7530 T	17	-.16	-.28	-.32	-.20	-.24	-.28	-.20	-.28	-.32
7538 C	18	-.12	-.20	-.32	-.16	-.24	-.28	-.20	-.24	-.28
7538 M	19	-.12	-.24	-.32	-.16	-.28	-.28	-.20	-.28	-.32
7529 P	20	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28
7532 DD	21	-.12	-.28	-.32	-.16	-.24	-.32	-.20	-.28	-.32
7532 NN	22	-.12	-.24	-.32	-.16	-.24	-.28	-.20	-.24	-.28
7532 P	23	-.16	-.24	-.28	-.20	-.24	-.28	-.20	-.24	-.28
7532 N	24	-.16	-.24	-.28	-.20	-.24	-.28	-.20	-.24	-.28
7532 Z	25	-.12	-.24	-.28	-.16	-.24	-.28	-.20	-.24	-.28

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 9-30-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-17.00	-17.00	-17.00	-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7538 K	2	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 H	3	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 J	4	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 A	5	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7530 M	6	-17.00	-17.00	-17.00	-21.52	-21.56	-21.52	-27.60	-27.60	-27.60
7530 M	7	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 B	8	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 E	9	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 A	10	-17.00	-17.00	-17.00	-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7538 N	11	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 R	12	-17.00	-17.00	-17.00	-21.52	-21.56	-21.52	-27.60	-27.60	-27.60
7538 R	13	-17.00	-17.00	-17.00	-21.52	-21.56	-21.52	-27.60	-27.60	-27.60
7538 H	14	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 PP	15	-17.00	-17.00	-17.00	-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7532 KK	16	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7530 T	17	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 C	18	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 M	19	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7529 P	20	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.64	-27.60
7532 DD	21	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 NN	22	-17.00	-17.04	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 P	23	-17.00	-17.00	-17.00	-21.56	-21.52	-21.52	-27.60	-27.60	-27.60
7532 N	24	-17.00	-17.00	-17.00	-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 Z	25	-17.00	-17.00	-17.00	-21.52	-21.52	-21.56	-27.60	-27.60	-27.60

TEST LIMITS = 16.9V to VDD

FIRE (TERMINAL 4)-SUBGROUPS A2,A3,A4

COLLINS DIVISIONS

DATE 9-30-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-1.40	-2.56	-3.00	-1.76	-2.56	-2.96	-2.24	-2.80	-3.16
7538 K	2	-1.20	-2.32	-2.76	-1.52	-2.32	-2.68	-2.00	-2.48	-2.80
7532 H	3	-1.28	-2.32	-2.68	-1.64	-2.36	-2.72	-2.12	-2.60	-2.96
7538 J	4	-1.36	-2.76	-3.32	-1.72	-2.64	-3.04	-2.20	-2.76	-3.12
7532 A	5	-1.28	-2.32	-2.72	-1.64	-2.36	-2.76	-2.20	-2.64	-3.00
7530 M	6	-1.36	-2.48	-2.92	-1.72	-2.48	-2.88	-2.20	-2.72	-3.12
7530 M	7	-1.36	-2.68	-3.16	-1.72	-2.56	-3.00	-2.20	-2.76	-3.12
7538 B	8	-1.20	-2.36	-2.80	-1.56	-2.32	-2.68	-2.00	-2.48	-2.84
7538 B	9	-1.36	-2.56	-3.04	-1.68	-2.48	-2.92	-2.16	-2.68	-3.04
7538 A	10	-1.20	-2.32	-2.76	-1.52	-2.32	-2.68	-2.00	-2.48	-2.84
7538 N	11	-1.40	-2.76	-3.28	-1.76	-2.64	-3.04	-2.24	-2.80	-3.20
7538 R	12	-1.28	-2.64	-3.08	-1.64	-2.48	-2.84	-2.12	-2.64	-2.96
7538 R	13	-1.44	-2.88	-3.44	-1.84	-2.72	-3.16	-2.36	-2.88	-3.28
7538 H	14	-1.40	-2.52	-3.00	-1.72	-2.48	-2.88	-2.20	-2.72	-3.08
7532 PP	15	-1.28	-2.36	-2.80	-1.64	-2.40	-2.80	-2.08	-2.56	-2.96
7532 KK	16	-1.28	-2.36	-2.80	-1.68	-2.40	-2.80	-2.12	-2.64	-3.00
7530 T	17	-1.36	-2.44	-2.92	-1.68	-2.48	-2.88	-2.16	-2.68	-3.12
7538 C	18	-1.36	-2.56	-3.04	-1.72	-2.52	-2.96	-2.16	-2.68	-3.12
7538 M	19	-1.40	-2.64	-3.12	-1.76	-2.60	-3.00	-2.24	-2.80	-3.20
7529 P	20	-1.36	-2.36	-2.80	-1.72	-2.44	-2.84	-2.16	-2.68	-3.08
7532 DD	21	-1.28	-2.40	-2.88	-1.68	-2.44	-2.84	-2.16	-2.64	-3.04
7532 NN	22	-1.24	-2.32	-2.76	-1.60	-2.36	-2.72	-2.04	-2.48	-2.88
7532 P	23	-1.24	-2.28	-2.68	-1.56	-2.32	-2.68	-2.04	-2.48	-2.88
7532 N	24	-1.24	-2.36	-2.80	-1.64	-2.36	-2.80	-2.08	-2.56	-2.96
7538 Z	25	-1.20	-2.20	-2.64	-1.56	-2.28	-2.68	-2.04	-2.48	-2.84

TEST LIMITS = 0.0V to -10.0V

appendix d

G14(TERMINAL 5), V5M - SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75
SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-35.64	-34.80	-34.00			
7538 K	2				-33.60	-32.68	-31.76			
7532 H	3				-32.12	-31.40	-30.68			
7538 J	4				-37.48	-36.44	-35.48			
7532 A	5				-32.08	-31.52	-30.92			
7530 M	6				-31.80	-31.04	-30.32			
7530 M	7				-31.96	-31.28	-30.64			
7538 B	8				-35.04	-34.12	-33.16			
7538 E	9				-33.20	-32.44	-31.60			
7538 A	10				-38.12	-37.00	-35.84			
7538 N	11				-34.32	-33.44	-32.48			
7538 R	12				-31.36	-30.80	-30.20			
7538 R	13				-36.24	-35.28	-34.24			
7538 H	14				-33.52	-32.48	-31.40			
7532PP	15				-35.16	-34.20	-33.20			
7532KK	16				-35.40	-34.40	-33.40			
7530 T	17				-32.96	-32.08	-31.16			
7538 C	18				-36.48	-35.36	-34.20			
7538 M	19				-36.72	-35.64	-34.52			
7529 P	20				-30.08	-29.44	-28.76			
7532 DD	21				-35.32	-32.28	-33.20			
7532 NN	22				-31.16	-30.32	-29.40			
7532 P	23				-37.72	-36.60	-35.48			
7532 N	24				-33.28	-32.40	-31.36			
7532 Z	25				-36.12	-35.12	-34.00			

TEST LIMITS =-28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUPS A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-21.52	-21.52	-21.52	-27.64	-27.64	-27.64
7538 K	2				-21.52	-21.52	-21.56	-27.64	-27.60	-27.60
7532 H	3				-21.52	-21.52	-21.52	-27.60	-27.64	-27.60
7538 J	4				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 A	5				-21.52	-21.52	-21.52	-27.64	-27.60	-27.60
7530 M	6				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7530 M	7				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 B	8				-21.52	-21.52	-21.52	-27.60	-27.64	-27.64
7538 E	9				-21.52	-21.52	-21.52	-27.60	-27.60	-27.64
7538 A	10				-21.52	-21.52	-21.52	-27.60	-27.60	-27.64
7538 N	11				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 R	12				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 R	13				-21.52	-21.52	-21.52	-27.60	-27.60	-27.64
7538 H	14				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 PP	15				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 KK	16				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7530 T	17				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 C	18				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7538 M	19				-21.52	-21.52	-21.52	-27.60	-27.60	-27.64
7529 P	20				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 DD	21				-21.52	-21.52	-21.52	-27.64	-27.60	-27.60
7532 NN	22				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60
7532 P	23				-21.52	-21.52	-21.52	-27.60	-27.64	-27.60
7532 N	24				-21.52	-21.52	-21.52	-27.64	-27.60	-27.60
7532 Z	25				-21.52	-21.52	-21.52	-27.60	-27.60	-27.60

TEST LIMITS = -21.4V to VDD

Q4 (TERMINAL 6) - SUBGROUPS A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 9-30-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-.40	-.76	-.88	-.48	-.72	-.88
7538 K	2				-.36	-.72	-.84	-.44	-.68	-.84
7532 H	3				-.36	-.72	-.80	-.44	-.64	-.76
7538 J	4				-.40	-.76	-.88	-.48	-.72	-.88
7532 A	5				-.36	-.68	-.84	-.44	-.68	-.80
7530 M	6				-.44	-.72	-.88	-.44	-.72	-.84
7530 M	7				-.40	-.76	-.92	-.48	-.72	-.88
7538 B	8				-.36	-.68	-.84	-.44	-.64	-.76
7538 E	9				-.40	-.76	-.88	-.44	-.72	-.88
7538 A	10				-.36	-.72	-.84	-.44	-.64	-.80
7538 N	11				-.40	-.84	-1.00	-.52	-.76	-.92
7538 R	12				-.40	-.76	-.92	-.48	-.72	-.88
7538 R	13				-.40	-.76	-.92	-.48	-.72	-.88
7538 H	14				-.40	-.72	-.88	-.44	-.68	-.84
7532 PP	15				-.40	-.72	-.88	-.44	-.72	-.88
7532 KK	16				-.40	-.72	-.88	-.44	-.68	-.84
7530 T	17				-.40	-.76	-.88	-.44	-.72	-.88
7538 C	18				-.40	-.76	-.92	-.48	-.72	-.88
7538 M	19				-.40	-.76	-.92	-.48	-.72	-.88
7529 P	20				-.36	-.68	-.84	-.44	-.68	-.84
7532 DD	21				-.48	-.72	-.88	-.56	-.88	-1.04
7532 NN	22				-.40	-.72	-.88	-.44	-.72	-.88
7532 P	23				-.36	-.72	-.88	-.44	-.72	-.88
7532 N	24				-.40	-.72	-.88	-.44	-.68	-.84
7532 Z	25				-.36	-.68	-.84	-.44	-.64	-.80

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M-SUBGROUPS A2,A3,A4
SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 9-30-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-35.76	-34.88	-34.04			
7538 K	2				-33.08	-32.16	-31.25			
7532 H	3				-30.52	-29.92	-29.32			
7538 J	4				-35.52	-34.64	-33.72			
7532 A	5				-31.52	-30.84	-30.04			
7530 M	6				-31.28	-30.52	-29.72			
7530 M	7				-35.04	-34.16	-33.28			
7538 B	8				-35.12	-34.16	-33.16			
7538 E	9				-35.80	-34.76	-33.72			
7538 A	10				-38.36	-37.24	-36.08			
7538 N	11				-35.08	-34.04	-32.92			
7538 R	12				-32.92	-32.28	-31.60			
7538 R	13				-36.64	-35.64	-34.52			
7538 H	14				-33.82	-32.28	-31.20			
7532 PP	15				-34.92	-33.96	-32.92			
7532 KK	16				-33.48	-32.52	-31.52			
7530 T	17				-33.24	-32.24	-31.32			
7538 C	18				-36.08	-35.00	-33.80			
7538 M	19				-37.68	-36.56	-35.32			
7529 P	20				-33.56	-32.64	-31.76			
7532 DD	21				-35.88	-34.80	-33.68			
7532 NN	22				-35.12	-34.12	-33.08			
7532 P	23				-33.20	-32.56	-31.80			
7532 N	24				-33.40	-32.48	-31.44			
7532 Z	25				-32.92	-31.92	-30.84			

TEST LIMITS = -28.0V Minimum

MON (TERMINAL 9), V9M-SUBGROUPS A2, A3, A4
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 9-30-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-34.84	-34.00	-33.16			
7538 K	2				-34.48	-33.52	-32.48			
7532 H	3				-32.20	-31.48	-30.68			
7538 J	4				-34.20	-33.26	-32.40			
7532 A	5				-33.88	-33.04	-32.08			
7530 M	6				-33.20	-32.40	-31.48			
7530 M	7				-34.48	-33.64	-32.72			
7538 B	8				-33.28	-32.40	-31.40			
7538 E	9				-35.76	-34.80	-33.68			
7538 A	10				-37.68	-36.60	-35.44			
7538 N	11				-34.32	-33.40	-32.36			
7538 R	12				-33.20	-32.48	-31.76			
7538 R	13				-37.04	-36.08	-34.96			
7538 H	14				-33.88	-32.80	-31.64			
7532 PP	15				-35.68	-34.68	-33.60			
7532 KK	16				-34.52	-33.52	-32.44			
7530 T	17				-30.64	-29.96	-29.12			
7538 C	18				-36.56	-35.44	-34.20			
7538 M	19				-37.84	-36.72	-35.44			
7529 P	20				-32.96	-32.08	-31.12			
7532 DD	21				-34.68	-33.60	-32.44			
7532 NN	22				-34.52	-33.52	-32.44			
7532 P	23				-36.72	-35.64	-34.48			
7532 N	24				-34.36	-33.40	-32.28			
7532 Z	25				-32.16	-31.12	-30.00			

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P-SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75
 SCALER INPUT (POSITIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
 NEWPORT BEACH, CALIF.

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				+1.04	+1.04	+1.04			
7538 K	2				+1.16	+1.20	+1.28			
7532 H	3				+1.16	+1.20	+1.28			
7538 J	4				+1.04	+1.00	+1.00			
7532 A	5				+1.04	+1.04	+1.04			
7530 M	6				+1.12	+1.12	+1.12			
7530 M	7				+1.16	+1.32	+1.36			
7538 B	8				+1.04	+1.04	+1.00			
7538 E	9				+1.04	+1.00	+1.00			
7538 A	10				+1.04	+1.00	+1.00			
7538 N	11				+1.16	+1.32	+1.36			
7538 R	12				+1.00	+ .96	+ .92			
7538 R	13				+1.08	+1.08	+1.12			
7538 H	14				+1.20	+1.32	+1.14			
7532 PP	15				+1.04	+1.00	+1.00			
7532 KK	16				+1.28	+1.44	+1.52			
7530 T	17				+1.16	+1.28	+1.36			
7538 C	18				+1.04	+1.00	+1.00			
7538 M	19				+1.20	+1.32	+1.36			
7529 P	20				+1.08	+1.04	+1.04			
7532 DD	21				+1.08	+1.08	+1.08			
7532 NN	22				+1.08	+1.08	+1.08			
7532 P	23				+1.04	+1.00	+1.00			
7532 N	24				+1.28	+1.44	+1.56			
7532 Z	25				+1.04	+1.04	+1.00			

TEST LIMITS = 0.V to +6.0V

CL (TERMINAL 10), V10M-SUBGROUPS A2,A3,A4 COLLINS DIVISIONS DATE 9-30-75
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-36.00	-35.08	-34.20			
7538 K	2				-32.76	-31.92	-31.00			
7532 H	3				-30.48	-29.88	-29.24			
7538 J	4				-35.40	-34.48	-33.60			
7532 A	5				-33.68	-32.28	-32.12			
7530 M	6				-33.52	-32.60	-31.76			
7530 M	7				-32.44	-31.84	-31.20			
7538 B	8				-34.84	-33.92	-32.92			
7538 E	9				-34.16	-33.36	-32.44			
7538 A	10				-38.08	-36.96	-35.80			
7538 N	11				-35.68	-34.68	-33.56			
7538 R	12				-33.88	-33.12	-32.44			
7538 R	13				-35.40	-34.48	-33.52			
7538 H	14				-33.84	-32.80	-31.72			
7532 PP	15				-36.60	-35.56	-34.48			
7532 KK	16				-34.40	-33.52	-32.52			
7530 T	17				-31.40	-30.56	-29.80			
7538 C	18				-36.60	-35.48	-34.32			
7538 M	19				-38.00	-36.88	-35.68			
7529 P	20				-31.60	-30.84	-30.00			
7532 DD	21				-34.32	-33.32	-32.24			
7532 NN	22				-34.44	-33.52	-32.52			
7532 P	23				-37.16	-36.08	-34.96			
7532 N	24				-33.28	-32.44	-31.44			
7532 Z	25				-33.24	-32.36	-31.28			

TEST LIMITS = -28.0V Minimum

AD-A038 513

ROCKWELL INTERNATIONAL NEWPORT BEACH CALIF COLLINS C--ETC F/G 9/5
FABRICATION AND TESTING OF MOS SCALER/LOGIC AND OVERHEAD SAFETY--ETC(U)
MAY 76 G L DONALDSON

DAA639-75-C-0146

UNCLASSIFIED

765-5608-001

HDL-CR-76-146-1

NL

3 OF 3
AD
A038 513



END

DATE

FILMED

5-77

SP (TERMINAL 11)-SUBGROUPS A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-10.04	-10.00	- 9.92	-13.92	-13.80	-13.12	-19.16	-19.00	-18.92
7538 K	2	-10.36	-10.32	-10.28	-14.28	-14.20	-14.08	-19.64	-19.48	-19.40
7532 H	3	-10.56	-10.48	-10.40	-14.48	-14.32	-14.24	-19.76	-19.60	-19.48
7538 J	4	-10.16	-10.08	-10.04	-14.04	-13.92	-13.88	-19.36	-19.20	-19.12
7532 A	5	-10.48	-10.36	-10.32	-14.32	-14.20	-14.08	-19.64	-19.44	-19.32
7530 M	6	-10.52	-10.44	-10.36	-14.44	-14.28	-14.20	-19.76	-19.56	-19.44
7530 M	7	-10.00	- 9.88	- 9.84	-13.88	-13.72	-13.64	-19.16	-19.00	-18.84
7538 B	8	-10.48	-10.36	-10.32	-14.36	-14.24	-14.16	-19.68	-19.52	-19.40
7538 E	9	-10.04	- 9.96	- 9.92	-13.92	-13.84	-13.72	-19.20	-19.04	-19.00
7538 A	10	-10.00	- 9.98	- 9.84	-13.80	-13.68	-13.60	-19.04	-18.84	-18.76
7538 N	11	- 9.52	- 9.52	- 9.48	-13.36	-13.32	-13.24	-18.68	-18.52	-18.84
7538 R	12	- 9.84	- 9.80	- 9.72	-13.80	-13.68	-13.60	-19.12	-19.00	-18.88
7538 R	13	-10.32	-10.28	-10.16	-14.20	-14.08	-14.00	-19.56	-19.44	-19.32
7538 H	14	-10.00	- 9.96	- 9.88	-13.88	-13.76	-13.72	-19.12	-19.00	-18.92
7532 PP	15	-10.36	-10.28	-10.28	-14.24	-14.16	-14.04	-19.56	-19.40	-19.28
7532 KK	16	-10.68	-10.60	-10.52	-14.64	-14.48	-14.36	-19.96	-19.76	-19.68
7530 T	17	- 9.96	- 9.88	- 9.80	-13.76	-13.64	-13.56	-19.00	-18.80	-18.68
7538 C	18	-10.04	- 9.92	- 9.88	-13.84	-13.72	-13.68	-19.12	-18.96	-18.84
7538 M	19	-10.08	-10.04	-10.00	-13.92	-13.84	-13.76	-19.20	-19.04	-19.00
7529 P	20	-10.64	-10.52	-10.44	-14.52	-14.36	-14.28	-19.80	-19.64	-19.48
7532 DD	21	-10.48	-10.36	-10.32	-14.36	-14.24	-14.16	-19.68	-19.48	-19.40
7532 NN	22	-10.36	-10.28	-10.20	-14.24	-14.16	-14.00	-19.56	-19.40	-19.28
7532 P	23	- 9.92	- 9.84	-9.80	-13.72	-13.60	-13.52	-18.92	-18.76	-18.64
7532 N	24	-10.52	-10.44	-10.40	-14.44	-14.32	-14.24	-19.76	-19.60	-19.48
7532 Z	25	-10.36	-10.32	-10.28	-14.28	-14.16	-14.04	-19.60	-19.40	-19.28

TEST LIMITS = -8.0V to VDD

SP (TERMINAL 11) - SUBGROUPS A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-.48	-.64	-.84	-.84	-.84	-1.04	-1.36	-1.36	-1.36
7538 K	2	-.48	-.60	-.76	-.76	-.80	-1.00	-1.24	-1.24	-1.28
7532 H	3	-.52	-.60	-.80	-.84	-.84	-1.00	-1.32	-1.28	-1.32
7538 J	4	-.44	-.56	-.76	-.76	-.76	-0.96	-1.24	-1.24	-1.24
7532 A	5	-.52	-.64	-.80	-.84	-.84	-1.04	-1.28	-1.32	-1.36
7530 M	6	-.52	-.64	-.80	-.84	-.84	-1.04	-1.32	-1.32	-1.36
7530 M	7	-.48	-.60	-.80	-.80	-.80	-1.04	-1.28	-1.28	-1.32
7538 B	8	-.44	-.56	-.76	-.76	-.76	-.92	-1.20	-1.20	-1.20
7538 E	9	-.44	-.56	-.76	-.76	-.76	-.96	-1.24	-1.24	-1.24
7538 A	10	-.44	-.56	-.76	-.72	-.72	-.88	-1.12	-1.12	-1.16
7538 N	11	-.44	-.60	-.80	-.76	-.80	-1.04	-1.28	-1.28	-1.32
7538 R	12	-.44	-.56	-.76	-.76	-.76	-.88	-1.20	-1.24	-1.24
7538 R	13	-.52	-.64	-.84	-.84	-.84	-1.04	-1.36	-1.36	-1.40
7538 H	14	-.48	-.60	-.80	-.80	-.84	-1.00	-1.28	-1.28	-1.28
7532 PP	15	-.48	-.60	-.80	-.80	-.80	-1.04	-1.28	-1.28	-1.32
7532 KK	16	-.52	-.60	-.80	-.84	-.84	-1.00	-1.28	-1.28	-1.36
7530 T	17	-.48	-.60	-.76	-.80	-.80	-1.00	-1.28	-1.28	-1.28
7538 C	18	-.44	-.56	-.76	-.76	-.76	-.92	-1.20	-1.20	-1.20
7538 M	19	-.48	-.60	-.80	-.80	-.80	-1.04	-1.28	-1.28	-1.32
7529 P	20	-.56	-.64	-.76	-.84	-.88	-1.00	-1.32	-1.32	-1.32
7532 DD	21	-.48	-.60	-.76	-.80	-.80	-1.00	-1.28	-1.28	-1.28
7532 NN	22	-.56	-.68	-.76	-.76	-.88	-1.00	-1.24	-1.24	-1.28
7532 P	23	-.48	-.60	-.76	-.76	-.76	-.96	-1.24	-1.24	-1.24
7532 N	24	-.48	-.60	-.76	-.80	-.80	-1.00	-1.28	-1.28	-1.28
7532 Z	25	-.48	-.56	-.76	-.76	-.76	-.92	-1.20	-1.20	-1.24

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUPS A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	- 9.96	- 9.88	- 9.84	-13.80	-13.68	-13.60	-19.04	-18.88	-18.80
7538 K	2	-10.44	-10.36	-10.36	-14.36	-14.28	-14.20	-19.76	-19.60	-19.48
7532 H	3	-10.64	-10.52	-10.48	-14.56	-14.44	-14.32	-19.92	-19.72	-19.64
7538 J	4	-10.04	-10.00	- 9.92	-13.92	-13.84	-13.72	-19.20	-19.08	-19.00
7532 A	5	-10.32	-10.28	-10.16	-14.20	-14.00	-13.92	-19.44	-19.24	-19.12
7530 M	6	-10.48	-10.36	-10.32	-14.36	-14.20	-14.12	-19.64	-19.44	-19.32
7530 M	7	- 9.80	- 9.72	- 9.68	-13.68	-13.52	-13.44	-18.96	-18.76	-18.64
7538 B	8	-10.40	-10.32	-10.28	-14.28	-14.16	-14.08	-19.60	-19.44	-19.32
7538 E	9	-10.08	-10.04	-10.00	-14.00	-13.88	-13.84	-19.32	-19.16	-19.08
7538 A	10	- 9.88	- 9.84	- 9.80	-13.72	-13.60	-13.52	-18.96	-18.76	-18.68
7538 N	11	- 9.68	- 9.60	- 9.60	-13.56	-13.48	-13.40	-18.84	-18.68	-18.64
7538 R	12	- 9.72	- 9.64	- 9.56	-13.60	-13.52	-13.40	-18.96	-18.76	-18.68
7538 R	13	-10.00	- 9.88	- 9.88	-13.84	-13.72	-13.68	-19.12	-19.00	-18.92
7538 A	14	-10.04	-10.00	- 9.92	-13.92	-13.84	-13.76	-19.20	-19.08	-19.00
7532 PP	15	-10.40	-10.32	-10.28	-14.28	-14.16	-14.04	-19.60	-19.44	-19.32
7532 KK	16	-10.56	-10.48	-10.44	-14.48	-14.32	-14.24	-19.76	-19.60	-19.48
7530 T	17	-10.40	-10.32	-10.28	-14.28	-14.16	-14.04	-19.60	-19.40	-19.28
7538 C	18	-10.00	- 9.92	- 9.88	-13.84	-13.72	-13.64	-19.04	-18.92	-18.80
7538 M	19	-10.08	-10.04	-10.00	-13.92	-13.84	-13.76	-19.20	-19.04	-18.96
7529 P	20	-10.80	-10.72	-10.64	-14.72	-14.60	-14.52	-20.12	-19.92	-19.76
7532 DD	21	-10.48	-10.36	-10.32	-14.36	-14.24	-14.16	-19.72	-19.48	-19.40
7532 NN	22	-10.40	-10.32	-10.28	-14.32	-14.20	-14.04	-19.64	-19.44	-19.32
7532 P	23	- 9.88	- 9.84	- 9.76	-13.68	-13.56	-13.48	-18.88	-18.68	-18.60
7532 N	24	-10.48	-10.40	-10.36	-14.36	-14.28	-14.20	-19.72	-19.56	-19.44
7532 Z	25	-10.48	-10.40	-10.32	-14.36	-14.24	-14.16	-19.72	-19.52	-19.40

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12) - SUBGROUPS A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530M	1	-.24	-.40	-.44	-.40	-.52	-.52	-.64	-.64	-.68
7538K	2	-.24	-.40	-.40	-.40	-.48	-.52	-.60	-.64	-.64
7532H	3	-.24	-.40	-.40	-.40	-.52	-.52	-.60	-.64	-.68
7538J	4	-.24	-.40	-.40	-.36	-.44	-.48	-.56	-.60	-.60
7532A	5	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7530M	6	-.24	-.40	-.40	-.40	-.48	-.52	-.60	-.64	-.64
7530M	7	-.24	-.40	-.44	-.40	-.48	-.52	-.60	-.64	-.64
7538B	8	-.24	-.40	-.40	-.36	-.44	-.44	-.56	-.56	-.60
7538E	9	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.64
7538A	10	-.24	-.36	-.36	-.36	-.44	-.44	-.56	-.56	-.56
7538N	11	-.24	-.44	-.44	-.40	-.52	-.56	-.64	-.68	-.68
7538R	12	-.24	-.40	-.40	-.36	-.44	-.48	-.56	-.60	-.60
7538R	13	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7538H	14	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7532PP	15	-.24	-.40	-.44	-.40	-.52	-.52	-.60	-.64	-.68
7532KK	16	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7530T	17	-.28	-.44	-.44	-.44	-.52	-.52	-.64	-.64	-.68
7538C	18	-.24	-.40	-.40	-.40	-.44	-.48	-.56	-.60	-.60
7538M	19	-.24	-.40	-.40	-.40	-.48	-.52	-.60	-.64	-.64
7529P	20	-.28	-.40	-.44	-.44	-.52	-.52	-.64	-.68	-.68
7532DD	21	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.64
7532NN	22	-.28	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.64
7532P	23	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.60	-.60
7532N	24	-.24	-.40	-.40	-.40	-.48	-.48	-.60	-.64	-.64
7532Z	25	-.24	-.40	-.40	-.40	-.48	-.48	-.56	-.60	-.60

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M-SUBGROUPS A2,A3,A4
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 9-30-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-34.84	-34.08	-33.32			
7538 K	2				-33.84	-32.88	-31.92			
7532 H	3				-30.96	-30.28	-29.64			
7538 J	4				-39.52	-33.80	-32.92			
7532 A	5				-33.36	-32.44	-31.60			
7530 M	6				-37.08	-36.08	-35.12			
7530 M	7				-33.04	-32.28	-31.56			
7538 B	8				-33.24	-32.40	-31.48			
7538 E	9				-31.96	-31.16	-30.36			
7538 A	10				-36.84	-35.76	-34.72			
7538 N	11				-36.08	-35.12	-34.04			
7538 R	12				-33.76	-33.08	-32.36			
7538 R	13				-37.28	-36.24	-35.12			
7538 H	14				-33.68	-32.88	-32.00			
7532 PP	15				-34.04	-33.12	-32.16			
7532 KK	16				-32.60	-31.80	-30.84			
7530 T	17				-30.92	-30.24	-29.52			
7538 C	18				-37.12	-36.00	-34.80			
7538 M	19				-37.44	-36.36	-35.16			
7529 P	20				-33.52	-32.64	-31.80			
7532 DD	21				-35.96	-34.84	-33.72			
7532 NN	22				-35.04	-34.04	-32.96			
7532 P	23				-39.20	-38.00	-36.84			
7532 N	24				-36.08	-35.12	-34.04			
7532 Z	25				-35.48	-34.44	-33.32			

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14)-SUBGROUPS A2,A3,A4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-10.36	-10.28	-10.16	-14.28	-14.08	-14.00	-19.60	-19.40	-19.28
7538 K	2	-10.36	-10.28	-10.28	-14.28	-14.16	-14.08	-19.64	-19.48	-19.40
7532 H	3	-10.80	-10.68	-10.64	-14.76	-14.60	-14.52	-20.12	-19.92	-19.80
7538 J	4	-10.08	-10.00	- 9.96	-13.96	-13.84	-13.76	-19.28	-19.12	-19.00
7532 A	5	-10.36	-10.28	-10.16	-14.20	-14.04	-13.96	-19.48	-19.28	-19.12
7530 M	6	-10.40	-10.32	-10.28	-14.32	-14.16	-14.04	-19.60	-19.40	-19.28
7530 M	7	-10.16	-10.04	-10.00	-14.08	-13.92	-13.88	-19.44	-19.20	-19.12
7538 B	8	-10.36	-10.32	-10.28	-14.32	-14.16	-14.04	-19.64	-19.44	-19.32
7538 E	9	-10.04	- 9.92	- 9.88	-13.88	-13.80	-13.72	-19.20	-19.04	-18.96
7538 A	10	- 9.88	- 9.80	- 9.76	-13.72	-13.56	-13.52	-18.96	-18.76	-18.64
7538 N	11	- 9.80	- 9.72	- 9.72	-13.68	-13.56	-13.52	-19.00	-18.84	-18.76
7538 R	12	- 9.72	- 9.64	- 9.60	-13.64	-13.52	-13.40	-19.00	-18.80	-18.68
7538 R	13	-10.08	-10.00	- 9.96	-14.00	-13.88	-13.80	-19.32	-19.12	-19.04
7538 H	14	- 9.92	- 9.88	- 9.84	-13.80	-13.68	-13.64	-19.12	-18.96	-18.84
7532 PP	15	-10.64	-10.52	-10.48	-14.56	-14.44	-14.36	-19.96	-19.76	-19.64
7532 KK	16	-10.84	-10.76	-10.68	-14.80	-14.64	-14.56	-20.16	-19.96	-19.84
7530 T	17	-10.16	-10.08	-10.04	-14.04	-13.92	-13.84	-19.32	-19.12	-19.00
7538 C	18	-10.00	- 9.88	- 9.84	-13.84	-13.68	-13.64	-19.04	-18.88	-18.80
7538 M	19	-10.16	-10.04	-10.00	-14.00	-13.88	-13.84	-19.32	-19.12	-19.00
7529 P	20	-10.68	-10.60	-10.52	-14.64	-14.48	-14.36	-19.96	-19.76	-19.64
7532 DD	21	-10.48	-10.40	-10.36	-14.40	-14.28	-14.20	-19.76	-19.56	-19.44
7532 NN	22	-10.48	-10.40	-10.36	-14.44	-14.28	-14.20	-19.76	-19.60	-19.48
7532 P	23	- 9.96	- 9.84	- 9.80	-13.76	-13.64	-13.52	-19.00	-18.76	-18.68
7532 N	24	-10.48	-10.36	-10.36	-14.36	-14.24	-14.16	-19.68	-19.48	-19.40
7532 Z	25	-10.48	-10.36	-10.32	-14.36	-14.20	-14.16	-19.68	-19.48	-19.36

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14)-SUBGROUPS A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1	-.72	-.72	-.76	-.84	-.88	-.88	-1.04	-1.08	-1.12
7538 K	2	-.68	-.72	-.72	-.84	-.88	-.88	-1.00	-1.08	-1.08
7532 H	3	-.68	-.72	-.72	-.80	-.88	-.88	-1.00	-1.08	-1.08
7538 J	4	-.64	-.68	-.68	-.76	-.84	-.84	-.96	-1.04	-1.08
7532 A	5	-.64	-.68	-.72	-.80	-.84	-.88	-.96	-1.04	-1.08
7530 M	6	-.68	-.72	-.72	-.80	-.88	-.88	-1.00	-1.08	-1.08
7530 M	7	-.72	-.76	-.76	-.88	-.88	-.88	-1.04	-1.08	-1.12
7538 B	8	-.60	-.64	-.64	-.76	-.76	-.80	-.92	-.96	-1.04
7538 E	9	-.68	-.68	-.72	-.80	-.84	-.88	-.96	-1.04	-1.08
7538 A	10	-.60	-.60	-.64	-.76	-.76	-.76	-.88	-.92	-.96
7538 N	11	-.76	-.76	-.76	-.88	-.88	-.92	-1.04	-1.08	-1.12
7538 R	12	-.68	-.72	-.72	-.80	-.84	-.88	-.96	-1.04	-1.08
7538 R	13	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.08
7538 H	14	-.64	-.68	-.72	-.76	-.84	-.84	-.92	-1.04	-1.08
7532 PP	15	-.72	-.76	-.76	-.88	-.88	-.92	-1.04	-1.12	-1.16
7532 KK	16	-.68	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.12
7530 T	17	-.68	-.72	-.72	-.80	-.88	-.88	-1.00	-1.08	-1.08
7538 C	18	-.64	-.68	-.68	-.76	-.80	-.84	-.92	-1.04	-1.04
7538 M	19	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.0	-1.12
7529 P	20	-.68	-.72	-.72	-.80	-.88	-.88	-1.00	-1.08	-1.12
7532 DD	21	-.68	-.68	-.72	-.80	-.84	-.88	-1.00	-1.08	-1.08
7532 NN	22	-.72	-.72	-.72	-.84	-.88	-.88	-1.04	-1.08	-1.12
7532 P	23	-.68	-.72	-.72	-.80	-.84	-.88	-.96	-1.08	-1.08
7532 N	24	-.68	-.72	-.72	-.80	-.84	-.88	-1.00	-1.08	-1.08
7532 Z	25	-.64	-.64	-.68	-.76	-.80	-.84	-.92	-1.04	-1.04

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V15M-SUBGROUPS A2, A3, A4
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS

DATE 9-30-75

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-35.16	-34.40	-33.64			
7538 K	2				-34.24	-33.28	-32.36			
7532 H	3				-33.48	-32.64	-31.92			
7538 J	4				-39.52	-33.80	-37.48			
7532 A	5				-33.40	-32.44	-31.76			
7530 M	6				-37.84	-36.64	-35.80			
7530 M	7				-34.20	-33.36	-32.48			
7538 B	8				-36.32	-35.36	-34.36			
7538 E	9				-36.20	-35.12	-34.08			
7538 A	10				-36.68	-35.64	-34.60			
7538 N	11				-37.92	-36.76	-35.60			
7538 R	12				-33.08	-32.44	-31.72			
7538 R	13				-36.44	-35.52	-34.48			
7538 H	14				-36.48	-35.32	-34.12			
7532 PP	15				-34.36	-33.40	-32.44			
7532 KK	16				-37.24	-36.16	-35.04			
7530 T	17				-34.68	-33.64	-32.64			
7538 C	18				-34.96	-33.88	-32.76			
7538 M	19				-35.52	-34.64	-33.64			
7529 P	20				-31.64	-31.00	-30.24			
7532 DD	21				-35.24	-34.36	-33.40			
7532 NN	22				-34.24	-33.36	-32.36			
7532 P	23				-34.32	-33.40	-32.44			
7532 N	24				-37.12	-36.12	-35.00			
7532 Z	25				-35.28	-34.20	-33.08			

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUPS A2,A3,A4

COLLINS DIVISIONS

DATE 9-30-75

SCALER OUTPUT (LOW LEVEL), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-11.36	- 6.84	- 6.56	-12.44	-11.00	-10.52
7538 K	2				- 8.76	- 7.60	- 7.32	-13.40	-11.88	-11.48
7532 H	3				-10.60	- 8.12	- 7.88	-14.04	-12.44	-12.04
7538 J	4				-10.68	- 6.76	- 6.52	-12.08	-11.20	-10.52
7532 A	5				-12.08	- 8.04	- 7.72	-14.08	-12.28	-11.88
7530 M	6				-10.52	- 7.52	- 7.24	-13.40	-11.72	-11.28
7530 M	7				-11.48	- 6.96	- 6.72	-12.76	-11.36	-10.80
7538 B	8				-12.40	- 7.64	- 7.36	-13.68	-12.16	-11.52
7538 E	9				-11.64	- 7.08	- 6.84	-12.88	-11.88	-10.88
7538 A	10				-12.56	- 7.92	- 7.60	-13.92	-12.40	-11.88
7538 N	11				-11.28	- 6.84	- 6.56	-12.60	-11.32	-10.64
7538 R	12				-10.92	- 6.80	-6.60	-12.44	-11.20	-10.68
7538 R	13				-10.32	- 7.00	- 6.76	-12.56	-11.28	-10.80
7538 H	14				- 7.76	- 7.44	- 7.16	-12.08	-11.64	-11.32
7532 PP	15				-8.24	- 7.40	- 7.12	-13.20	-11.60	-11.20
7532 KK	16				-12.92	- 7.68	- 7.40	-14.04	-12.88	-11.48
7530 T	17				-10.28	- 7.60	- 7.28	-13.16	-11.76	-11.32
7538 C	18				-12.04	- 7.32	- 7.08	-13.20	-12.24	-11.16
7538 M	19				-12.24	- 7.48	- 7.20	-13.56	-12.40	-11.28
7529 P	20				-13.04	- 8.12	- 7.80	-14.64	-12.48	-11.96
7532 DD	21				-10.04	- 7.60	- 7.28	-13.36	-11.76	-11.36
7532 NN	22				-10.92	- 7.20	- 6.88	-12.92	-11.36	-10.96
7532 P	23				-11.92	- 7.20	- 6.92	-13.08	-12.00	-10.88
7532 N	24				-12.44	- 7.68	- 7.40	-13.80	-12.60	-11.52
7532 Z	25				-11.04	- 7.80	- 7.48	-14.00	-12.08	-11.64

TEST LIMITS = -4.0V to VDD

appendix d

Q6 (TERMINAL 16)-SUBGROUPS A2,A3,A4
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 9-30-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7530 M	1				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 K	2				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 H	3				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 J	4				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 A	5				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7530 M	6				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7530 M	7				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 B	8				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 E	9				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 A	10				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 N	11				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 R	12				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 R	13				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 H	14				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 PP	15				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 KK	16				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7530 T	17				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 C	18				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7538 M	19				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7529 P	20				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 DD	21				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 NN	22				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 P	23				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 N	24				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
7532 Z	25				-0.00	-0.00	-0.00	-0.00	-0.00	-0.00

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A-SUBGROUP B1

SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26								-4.60	
7530 S	27								-5.00	
7538 T	28								-4.90	
7538 X	29								-5.00	
7532 M	30								-5.10	
7538 Z	31								-5.60	
7538 S	32								-4.90	
7532 X	33								-5.00	
7532 K	34								-4.90	
7530 N	35								-5.00	
7532 X	36								-4.90	
7532 L	37								-4.70	
7532 C	38								-4.80	
7532 BB	39								-5.10	
7532 D	40								-4.60	
7538 AA	41								-5.80	
7538 G	42								-4.40	
7530 J	43								-5.40	
7530 K	44								-5.20	
7530 G	45								-4.70	
7530 A	46								-5.00	
7530 U	47								-5.00	
7532 EE	48								-5.10	
7532 J	49								-4.90	
7532 H	50								-4.90	

TEST LIMITS =2.0mA to 10.0 mA

appendix d

ARM (TERMINAL 3) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-16.96			-21.44			-27.55	
7530 S	27		-16.96			-21.44			-27.52	
7538 T	28		-16.96			-21.44			-27.52	
7538 X	29		-16.96			-21.44			-27.52	
7532 M	30		-16.96			-21.44			-37.52	
7538 Z	31		-16.96			-21.44			-27.52	
7538 S	32		-16.96			-21.44			-27.52	
7532 X	33		-16.96			-21.44			-27.52	
7532 K	34		-16.96			-21.44			-27.52	
7530 N	35		-16.96			-21.44			-27.52	
7532 X	36		-16.96			-21.44			-27.52	
7532 L	37		-16.96			-21.44			-27.52	
7532 C	38		-16.96			-21.44			-27.52	
7532 BB	39		-16.96			-21.44			-27.52	
7532 D	40		-16.96			-21.44			-27.52	
7538 AA	41		-16.96			-21.44			-27.52	
7538 G	42		-16.96			-21.44			-27.52	
7530 J	43		-16.96			-21.44			-27.52	
7530 K	44		-16.96			-21.44			-27.52	
7530 G	45		-16.96			-21.44			-27.52	
7530 A	46		-16.96			-21.44			-27.52	
7530 U	47		-16.96			-21.44			-26.60	
7532 EE	48		-16.96			-21.44			-27.52	
7532 J	49		-16.96			-21.44			-27.52	
7532 H	50		-16.96			-21.44			-27.52	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-.24			-.24			-.28	
7530 S	27		-.28			-.28			-.28	
7538 T	28		-.28			-.28			-.28	
7538 X	29		-.28			-.28			-.28	
7532 M	30		-.24			-.24			-.28	
7538 Z	31		-.24			-.24			-.24	
7538 S	32		-.28			-.28			-.28	
7532 X	33		-.20			-.24			-.24	
7532 K	34		-.28			-.28			-.28	
7530 N	35		-.24			-.24			-.28	
7532 X	36		-.28			-.28			-.28	
7532 L	37		-.28			-.28			-.28	
7532 C	38		-.28			-.28			-.28	
7532 BB	39		-.24			-.24			-.28	
7532 D	40		-.28			-.28			-.28	
7538 AA	41		-.28			-.28			-.28	
7538 G	42		-.28			-.28			-.28	
7530 J	43		-.24			-.24			-.28	
7530 K	44		-.24			-.24			-.28	
7530 G	45		-.28			-.28			-.28	
7530 A	46		-.28			-.28			-.28	
7530 U	47		-.28			-.28			-.28	
7532 EE	48		-.24			-.24			-.28	
7532 J	49		-.28			-.28			-.28	
7532 H	50		-.28			-.28			-.28	

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-17.00			-21.56			-27.60	
7530 S	27		-17.00			-21.56			-27.60	
7538 T	28		-17.00			-21.52			-27.60	
7538 X	29		-17.00			-21.56			-27.60	
7532 M	30		-17.00			-21.52			-27.60	
7538 Z	31		-17.00			-21.52			-27.60	
7538 S	32		-17.00			-21.52			-27.60	
7532 X	33		-17.00			-21.56			-27.60	
7532 K	34		-17.00			-21.56			-27.60	
7530 N	35		-17.00			-21.52			-27.60	
7532 X	36		-17.00			-21.56			-27.60	
7532 L	37		-17.00			-21.56			-27.60	
7532 C	38		-17.00			-21.56			-27.60	
7532 BB	39		-17.00			-21.56			-27.60	
7532 D	40		-17.00			-21.52			-27.60	
7538 AA	41		-17.00			-21.56			-27.60	
7538 G	42		-17.00			-21.56			-27.60	
7530 J	43		-17.00			-21.52			-27.60	
7530 K	44		-17.00			-21.52			-27.60	
7530 G	45		-17.00			-21.56			-27.60	
7530 A	46		-17.00			-21.56			-27.60	
7530 U	47		-17.00			-21.52			-27.60	
7532 EE	48		-17.04			-21.56			-27.60	
7532 J	49		-17.00			-21.56			-27.60	
7532 H	50		-17.00			-21.56			-27.60	

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-2.84			-2.68			-2.80	
7530 S	27		-2.52			-2.52			-2.76	
7538 T	28		-2.40			-2.36			-2.52	
7538 X	29		-2.36			-2.36			-2.52	
7532 M	30		-2.32			-2.36			-2.52	
7538 Z	31		-2.24			-2.32			-2.48	
7538 S	32		-2.44			-2.40			-2.56	
7532 X	33		-2.16			-2.20			-2.44	
7532 K	34		-2.52			-2.52			-2.72	
7530 N	35		-2.48			-2.48			-2.68	
7532 X	36		-2.48			-2.52			-2.76	
7532 L	37		-2.72			-2.64			-2.80	
7532 C	38		-2.56			-2.52			-2.72	
7532 BB	39		-2.52			-2.56			-2.80	
7532 D	40		-2.60			-2.52			-2.68	
7538 AA	41		-2.48			-2.40			-2.56	
7538 G	42		-2.68			-2.60			-2.76	
7530 J	43		-2.32			-2.36			-2.60	
7530 K	44		-2.40			-2.48			-2.68	
7530 G	45		-2.44			-2.44			-2.64	
7530 A	46		-2.64			-2.56			-2.76	
7530 U	47		-2.64			-2.64			-2.84	
7532 EE	48		-2.20			-2.28			-2.48	
7532 J	49		-2.76			-2.64			-2.80	
7532 H	50		-3.12			-2.80			-2.92	

TEST LIMITS = 0.0V to -10.0V

appendix d

G14 (TERMINAL 5), V5M - SUBGROUP B1
SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-35.84				
7530 S	27					-34.00				
7538 T	28					-40.44				
7538 X	29					-36.92				
7532 M	30					-32.48				
7538 Z	31					-31.60				
7538 S	32					-39.24				
7532 X	33					-31.80				
7532 K	34					-33.72				
7530 N	35					-30.52				
7532 X	36					-32.12				
7532 L	37					-32.24				
7532 C	38					-32.88				
7532 BB	39					-30.80				
7532 D	40					-33.36				
7538 AA	41					-34.08				
7538 G	42					-32.00				
7530 J	43					-28.80				
7530 K	44					-33.76				
7530 G	45					-34.52				
7530 A	46					-38.60				
7530 U	47					-33.36				
7532 EE	48					-34.52				
7532 J	49					-31.04				
7532 H	50					-36.60				

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-21.52			-27.60	
7530 S	27					-21.52			-27.60	
7538 T	28					-21.52			-27.60	
7538 X	29					↑			↑	
7532 M	30									
7538 Z	31									
7538 S	32									
7532 X	33									
7532 K	34									
7530 N	35									
7532 X	36									
7532 L	37									
7532 C	38									
7532 BB	39									
7532 D	40									
7538 AA	41									
7538 G	42									
7530 J	43									
7530 K	44									
7530 G	45									
7530 A	46									
7530 U	47									
7532 EE	48									
7532 J	49					↓			↓	
7532 H	50					-21.52			-27.60	

TEST LIMITS = -21.4V to VDD

appendix d

Q4 (TERMINAL 6) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-.76			-.76	
7530 S	27					-.76			-.72	
7538 T	28					-.72			-.72	
7538 X	29					-.76			-.72	
7532 M	30					-.72			-.68	
7538 Z	31					-.72			-.68	
7538 S	32					-.76			-.72	
7532 X	33					-.64			-.64	
7532 K	34					-.76			-.72	
7530 N	35					-.72			-.68	
7532 X	36					-.76			-.72	
7532 L	37					-.76			-.72	
7532 C	38					-.76			-.72	
7532 BB	39					-.72			-.72	
7532 D	40					-.76			-.72	
7538 AA	41					-.72			-.68	
7538 G	42					-.76			-.76	
7530 J	43					-.68			-.64	
7530 K	44					-.72			-.68	
7530 G	45					-.76			-.72	
7530 A	46					-.72			-.72	
7530 U	47					-.80			-.76	
7532 EE	48					-.68			-.68	
7532 J	49					-.76			-.76	
7532 H	50					-.80			-.76	

TEST LIMITS = 0.0V TO -2.6V

M11 (TERMINAL 7), V7M -SUBGROUP B1

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT(NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-36.00				
7530 S	27					-35.64				
7538 T	28					-39.32				
7538 X	29					-38.84				
7532 M	30					-36.76				
7538 Z	31					-33.52				
7538 S	32					-36.44				
7532 X	33					-33.84				
7532 K	34					-32.96				
7530 N	35					-30.84				
7532 X	36					-34.16				
7532 L	37					-32.28				
7532 C	38					-33.84				
7532 BB	39					-32.68				
7532 D	40					-33.84				
7538 AA	41					-36.64				
7538 G	42					-31.76				
7530 J	43					-30.60				
7530 K	44					-31.72				
7530 G	45					-36.28				
7530 A	46					-38.56				
7530 U	47					-34.88				
7532 EE	48					-34.00				
7532 J	49					-33.12				
7532 H	50					-36.48				

TEST LIMITS = -28.0V MINIMUM

appendix d

MON (TERMINAL 9), V9M-SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-36.64				
7530 S	27					-36.44				
7538 T	28					-39.96				
7538 X	29					-35.04				
7532 M	30					-36.76				
7538 Z	31					-31.80				
7538 S	32					-38.16				
7532 X	33					-34.56				
7532 K	34					-33.20				
7530 N	35					-30.96				
7532 X	36					-34.00				
7532 L	37					-31.40				
7532 C	38					-35.36				
7532 BB	39					-31.60				
7532 D	40					-33.20				
7538 AA	41					-35.60				
7538 G	42					-31.68				
7530 J	43					-30.28				
7530 K	44					-33.20				
7530 G	45					-38.44				
7530 A	46					-36.20				
7530 U	47					-34.56				
7532 EE	48					-34.84				
7532 J	49					-33.40				
7532 H	50					-36.88				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B1
SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					+1.04				
7530 S	27					+1.00				
7538 T	28					+1.28				
7538 X	29					+1.68				
7532 M	30					+1.04				
7538 Z	31					+1.44				
7538 S	32					+1.52				
7532 X	33					+1.00				
7532 K	34					+1.16				
7530 N	35					+1.08				
7532 X	36					+1.24				
7532 L	37					+1.04				
7532 C	38					+1.04				
7532 BB	39					+1.04				
7532 D	40					+1.04				
7538 AA	41					+1.28				
7538 G	42					+1.00				
7530 J	43					+1.04				
7530 K	44					+1.04				
7530 G	45					+1.04				
7530 A	46					+1.04				
7530 U	47					+1.16				
7532 EE	48					+1.04				
7532 J	49					+1.04				
7532 H	50					+1.32				

TEST LIMITS = 0.0V to +6.0V

appendix d

CL (Terminal 10), V10M-SUBGROUP B1
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 11-12-25
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-36.60				
7530 S	27					-37.16				
7538 T	28					-40.44				
7538 X	29					-37.04				
7532 M	30					-37.04				
7538 Z	31					-32.08				
7538 S	32					-39.60				
7532 X	33					-35.48				
7532 K	34					-33.16				
7530 N	35					-30.68				
7532 X	36					-33.52				
7532 L	37					-31.20				
7532 C	38					-35.76				
7532 BB	39					-31.48				
7532 D	40					-33.32				
7538 AA	41					-37.00				
7538 G	42					-32.12				
7530 J	43					-33.28				
7530 K	44					-33.36				
7530 G	45					-38.04				
7530 A	46					-35.76				
7530 U	47					-35.04				
7532 EE	48					-35.44				
7532 J	49					-33.72				
7532 H	50					-37.08				

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		- 9.88			-13.72			-19.00	
7530 S	27		-10.20			-14.00			-19.20	
7538 T	28		-10.16			-14.00			-19.28	
7538 X	29		-10.00			-13.80			-19.00	
7532 M	30		-10.16			-13.92			-19.12	
7538 Z	31		-10.60			-14.52			-19.84	
7538 S	32		-10.48			-14.36			-19.72	
7532 X	33		-10.48			-14.36			-19.64	
7532 K	34		- 9.84			-13.56			-18.68	
7530 N	35		-10.16			-14.04			-19.36	
7532 X	36		-10.04			-13.84			-19.04	
7532 L	37		-10.08			-13.88			-19.12	
7532 C	38		-10.00			-13.84			-19.04	
7532 BB	39		-10.56			-14.44			-19.76	
7532 D	40		- 9.72			-13.52			-18.72	
7538 AA	41		-10.16			-14.00			-19.28	
7538 G	42		-10.00			-13.84			-19.04	
7530 J	43		-10.48			-14.36			-19.64	
7530 K	44		-10.32			-14.16			-19.40	
7530 G	45		- 9.80			-13.56			-18.76	
7530 A	46		-10.16			-14.00			-19.20	
7530 U	47		-10.04			-13.88			-19.08	
7532 EE	48		-10.48			-14.32			-19.56	
7532 J	49		- 9.88			-13.72			-18.96	
7532 H	50		- 9.72			-13.52			-18.76	

TEST LIMITS = -8.0V to VDD

appendix d

SP (TERMINAL 11) - SUBGROUP B1
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-.60			-.80			-1.28	
7530 S	27		-.64			-.84			-1.36	
7538 T	28		-.60			-.84			-1.28	
7538 X	29		-.64			-.84			-1.28	
7532 M	30		-.60			-.80			-1.24	
7538 Z	31		-.68			-.88			-1.40	
7538 S	32		-.64			-.88			-1.36	
7532 X	33		-.56			-.76			-1.24	
7532 K	34		-.60			-.80			-1.28	
7530 N	35		-.60			-.84			-1.28	
7532 X	36		-.60			-.84			-1.36	
7532 L	37		-.64			-.84			-1.32	
7532 C	38		-.60			-.84			-1.28	
7532 BB	39		-.64			-.88			-1.36	
7532 D	40		-.60			-.80			-1.28	
7538 AA	41		-.72			-.92			-1.44	
7538 G	42		-.56			-.76			-1.20	
7530 J	43		-.60			-.84			-1.32	
7530 K	44		-.60			-.84			-1.36	
7530 G	45		-.60			-.80			-1.28	
7530 A	46		-.60			-.84			-1.28	
7530 U	47		-.64			-.84			-1.36	
7532 EE	48		-.60			-.80			-1.24	
7532 J	49		-.60			-.84			-1.32	
7532 H	50		-.64			-.84			-1.36	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		- 9.88			-13.72			-19.04	
7530 S	27		-10.16			-13.92			-19.12	
7538 T	26		-10.16			-14.04			-19.32	
7538 X	29		-10.16			-14.00			-19.28	
7532 M	30		-10.56			-14.48			-19.76	
7538 Z	31		-10.64			-14.56			-19.92	
7538 S	32		-10.32			-14.20			-19.44	
7532 X	33		-10.80			-14.64			-20.00	
7532 K	34		-10.08			-13.84			-19.00	
7530 N	35		-10.08			-14.00			-19.28	
7532 X	36		-10.04			-13.84			-19.04	
7532 L	37		-10.12			-14.00			-19.28	
7532 C	38		- 9.96			-13.76			-19.00	
7532 BB	39		-10.44			-14.28			-19.52	
7532 D	40		- 9.68			-13.48			-18.68	
7538 AA	41		-10.20			-14.04			-19.40	
7538 G	42		- 9.84			-13.64			-18.84	
7530 J	43		-10.52			-14.44			-19.72	
7530 K	44		-10.16			-14.00			-19.28	
7530 G	45		-9.80			-13.56			-18.76	
7530 A	46		-10.16			-14.00			-19.20	
7530 U	47		-10.08			-13.92			-19.16	
7532 EE	48		-10.48			-14.32			-19.60	
7532 J	49		-10.00			-13.84			-19.12	
7532 H	50		- 9.72			-13.52			-18.68	

TEST LIMITS = -8.0V to VDD

appendix d

LP (TERMINAL 12) - SUBGROUPS B1

COLLINS DIVISIONS

DATE 11-12-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-.40			-.48			-.64	
7530 S	27		-.40			-.52			-.64	
7538 T	28		-.40			-.52			-.64	
7538 X	29		-.44			-.52			-.64	
7532 M	30		-.40			-.48			-.64	
7538 Z	31		-.44			-.56			-.72	
7538 S	32		-.40			-.48			-.64	
7532 X	33		-.40			-.48			-.60	
7532 K	34		-.40			-.52			-.64	
7530 N	35		-.40			-.48			-.64	
7532 X	36		-.44			-.52			-.64	
7532 L	37		-.44			-.52			-.64	
7532 C	38		-.44			-.52			-.64	
7532 BB	39		-.40			-.52			-.64	
7532 D	40		-.44			-.52			-.64	
7538 AA	41		-.44			-.56			-.72	
7538 G	42		-.40			-.44			-.60	
7530 J	43		-.40			-.52			-.64	
7530 K	44		-.44			-.52			-.68	
7530 G	45		-.40			-.48			-.60	
7530 A	46		-.40			-.52			-.64	
7530 U	47		-.44			-.52			-.64	
7532 EE	48		-.40			-.48			-.64	
7532 J	49		-.44			-.52			-.64	
7532 H	50		-.44			-.52			-.68	

TEST LIMITS = 0.0V to - 2.0V

INH (TERMINAL 13), V13M-SUBGROUP B1

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN) VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-37.68				
7530 S	27					-34.64				
7538 T	28					-40.96				
7538 X	29					-38.96				
7532 M	30					-33.48				
7538 Z	31					-32.36				
7538 S	32					-38.84				
7532 X	33					-31.60				
7532 K	34					-34.04				
7530 N	35					-31.12				
7532 X	36					-34.60				
7532 L	37					-31.68				
7532 C	38					-33.04				
7532 BB	39					-30.96				
7532 D	40					-32.60				
7538 AA	41					-37.32				
7538 G	42					-32.48				
7530 J	43					-33.20				
7530 K	44					-33.24				
7530 G	45					-36.44				
7530 A	46					-33.76				
7530 U	47					-34.52				
7532 EE	48					-34.56				
7532 J	49					-31.48				
7532 H	50					-32.56				
						-				

TEST LIMITS = -28.0V Min.

appendix d

G32 (TERMINAL 14) - SUBGROUP B1

COLLINS DIVISIONS

DATE 11-12-75

SCALER OUTPUT (LOW LEVEL), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		- 9.92			-13.80			-19.12	
7530 S	27		-10.32			-14.16			-19.40	
7538 T	28		- 9.80			-13.64			-18.84	
7538 X	29		-10.08			-13.88			-19.12	
7532 M	30		-10.48			-14.36			-19.64	
7538 Z	31		-10.68			-14.60			-19.96	
7538 S	32		-10.60			-14.52			-19.80	
7532 X	33		-10.56			-14.44			-19.76	
7532 K	34		-10.16			-13.92			-19.12	
7530 N	35		-10.04			-13.92			-19.20	
7532 X	36		-10.04			-13.84			-19.08	
7532 L	37		-10.04			-13.88			-19.16	
7532 C	38		-10.12			-14.00			-19.24	
7532 BB	39		-10.48			-14.32			-19.64	
7532 D	40		- 9.56			-13.36			-18.60	
7538 AA	41		-10.44			-14.36			-19.68	
7538 G	42		-10.08			-13.92			-19.16	
7530 J	43		-10.52			-14.36			-19.68	
7530 K	44		-10.12			-13.92			-19.16	
7530 G	45		- 9.80			-13.60			-18.80	
7530 A	46		-10.16			-14.00			-19.80	
7530 U	47		-10.04			-13.88			-19.12	
7532 EE	48		-10.56			-14.40			-19.68	
7532 J	49		-10.00			-13.88			-19.12	
7532 H	50		- 9.92			-13.80			-19.04	

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP B1

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

SCALER OUTPUT (HIGH LEVEL), VOLTS

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26		-.72			-.88			-1.08	
7530 S	27		-.72			-.88			-1.08	
7538 T	28		-.72			-.84			-1.08	
7538 X	29		-.72			-.88			-1.08	
7532 M	30		-.72			-.88			-1.08	
7538 Z	31		-.76			-.92			-1.16	
7538 S	32		-.76			-.84			-1.08	
7532 X	33		-.64			-.80			-1.04	
7532 K	34		-.72			-.88			-1.08	
7530 N	35		-.72			-.84			-1.04	
7532 X	36		-.72			-.88			-1.08	
7532 L	37		-.72			-.88			-1.08	
7532 C	38		-.72			-.88			-1.08	
7532 BB	39		-.72			-.88			-1.08	
7532 D	40		-.72			-.88			-1.08	
7538 AA	41		-.76			-.92			-1.20	
7538 G	42		-.68			-.84			-1.04	
7530 J	43		-.72			-.88			-1.08	
7530 K	44		-.72			-.88			-1.08	
7530 G	45		-.72			-.84			-1.04	
7530 A	46		-.72			-.88			-1.08	
7530 U	47		-.76			-.88			-1.12	
7532 EE	48		-.68			.84			-1.08	
7532 J	49		-.72			-.88			-1.08	
7532 H	50		-.76			-.88			-1.12	

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V15M-SUBGROUP B1

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT(NEGATIVE BREAKDOWN)VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-37.80				
7530 S	27					-33.52				
7538 T	28					-40.48				
7538 X	29					-40.40				
7532 M	30					-35.96				
7538 Z	31					-33.24				
7538 S	32					-39.96				
7532 X	33					-36.72				
7532 K	34					-35.00				
7530 N	35					-33.04				
7532 X	36					-32.24				
7532 L	37					-33.64				
7532 C	38					-32.68				
7532 BB	39					-34.36				
7532 D	40					-33.60				
7538 AA	41					-33.52				
7538 G	42					-33.08				
7530 J	43					-30.48				
7530 K	44					-32.24				
7530 G	45					-37.16				
7530 A	46					-36.36				
7530 U	47					-35.68				
7532 EE	48					-34.20				
7532 J	49					-32.68				
7532 H	50					-34.32				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B1
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-76

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					- 6.96			-11.16	
7530 S	27					- 7.36			-11.56	
7538 T	28					- 7.44			-12.08	
7538 X	29					- 7.92			-12.28	
7532 M	30					- 7.68			-11.96	
7538 Z	31					- 8.24			-12.84	
7538 S	32					- 7.76			-12.08	
7532 X	33					- 8.04			-13.12	
7532 K	34					- 7.00			-11.08	
7530 N	35					- 7.00			-11.56	
7532 X	36					- 7.68			-12.40	
7532 L	37					- 7.24			-11.64	
7532 C	38					- 7.32			-11.72	
7532 BB	39					-7.60			-12.24	
7532 D	40					- 6.80			-10.96	
7538 AA	41					- 7.32			-11.64	
7538 G	42					- 7.32			-11.48	
7530 J	43					- 8.12			-13.16	
7530 K	44					- 7.44			-11.64	
7530 G	45					- 7.28			-11.48	
7530 A	46					- 7.12			-11.16	
7530 U	47					- 7.44			-11.64	
7532 EE	48					- 8.04			-12.32	
7532 J	49					- 7.04			-11.28	
7532 H	50					- 7.00			-11.60	

TEST LIMITS = -4.0V to VDD

appendix d

Q6 (TERMINAL 16) - SUBGROUP B1

COLLINS DIVISIONS

DATE 11-12-75

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

SCALER OUTPUT (HIGH LEVEL), VOLTS

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 AA	26					-0.00			-0.00	
7530 S	27					↑			-0.00	
7538 T	28								-0.00	
7538 X	29								-0.04	
7532 M	30								-0.00	
7538 Z	31								-0.00	
7538 S	32								-0.00	
7532 X	33								-0.04	
7532 K	34								-0.00	
7530 N	35								-0.00	
7532 X	36								-0.00	
7532 L	37								-0.00	
7532 C	38								-0.00	
7532 BB	39								-0.00	
7532 D	40								-0.04	
7538 AA	41								-0.04	
7538 G	42								-0.04	
7530 J	43								-0.04	
7530 K	44								-0.04	
7530 G	45								-0.00	
7530 A	46								-0.04	
7530 U	47								-0.00	
7532 EE	48								-0.04	
7532 J	49								-0.00	
7532 H	50					↓			-0.00	

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A - SUBGROUP B2

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 11-12-75

SCALER BIAS (IDD CURRENT), MA

Device Identification								-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51								-4.20	
7532 Y	52								-4.80	
7538 CC	53								-5.00	
7538 DD	54								-4.80	
7538 D	55								-4.70	
7531 A	56								-4.60	
7538EE	57								-5.40	
7538GG	58								-4.60	
7538DD	59								-4.70	
7538EE	60								-5.90	

TEST LIMITS = 2.0mA to 10.0mA

appendix d

ARM (TERMINAL 3) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-17.00			-21.48			-27.52	
7532 Y	52		-16.96			-21.48			-27.52	
7538 CC	53		-16.96			-21.48			-27.52	
7538 DD	54		-16.96			-21.48			-27.52	
7538 D	55		-17.00			-21.48			-27.52	
7531 A	56		-16.96			-21.48			-27.52	
7538EE	57		-16.96			-21.48			-27.52	
7538GG	58		-16.92			-21.48			-27.52	
7538DD	59		-16.96			-21.48			-27.52	
7538EE	60		-16.96			-21.48			-27.52	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-.21			-.21			-.24	
7532 Y	52		-.28			-.24			-.28	
7538 CC	53		-.23			-.21			-.22	
7538 DD	54		-.24			-.20			-.24	
7538 D	55		-.25			-.24			-.25	
7531 A	56		-.28			-.24			-.24	
7538EE	57		-.20			-.20			-.24	
7538GG	58		-.26			-.24			-.28	
7538DD	59		-.22			-.22			-.22	
7538EE	60		-.22			-.24			-.24	

TEST LIMITS = 0.0V to -2.0V

appendix d

FIRE (TERMINAL 4) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-16.96			-21.48			-27.52	
7532 Y	52		-16.92			-21.48			-27.52	
7538 CC	53		-16.96			-21.48			-27.52	
7538 DD	54		-16.96			-21.48			-27.52	
7538 D	55		-16.96			-21.48			-27.52	
7531 A	56		-16.96			-21.48			-27.52	
7538EE	57		-16.96			-21.48			-27.52	
7538GG	58		-16.96			-21.48			-27.52	
7538DD	59		-16.96			-21.48			-27.52	
7538EE	60		-16.96			-21.48			-27.52	

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-2.24			-2.32			-2.68	
7532 Y	52		-2.28			-2.36			-2.68	
7538 CC	53		-2.36			-2.36			-2.44	
7538 DD	54		-2.36			-2.40			-2.60	
7538 D	55		-2.60			-2.60			-2.80	
7531 A	56		-2.64			-2.60			-2.76	
7538EE	57		-2.28			-2.24			-2.44	
7538GG	58		-2.76			-2.56			-2.52	
7538DD	59		-2.24			-2.32			-2.60	
7538EE	60		-2.00			-2.16			-2.44	

TEST LIMITS =0.0V to -10.0V

appendix d

G14 (TERMINAL 5), V5M-SUBGROUP B2
SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-32.04				
7532 Y	52					-34.80				
7538 CD	53					-36.72				
7538 DD	54					-39.40				
7538 D	55					-33.04				
7531 A	56					-31.64				
7538EE	57					-36.12				
7538GG	58					-38.36				
7538DD	59					-40.08				
7538EE	60					-33.24				

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-21.48			-27.52	
7532 Y	52					-21.48			-27.52	
7538 CC	53					-21.48			-27.52	
7538 DD	54					↑			↑	
7538 D	55					↑			↑	
7531 A	56					↑			↑	
7538EE	57					↑			↑	
7538GG	58					↑			↑	
7538DD	59					↑			↑	
7538EE	60					↑			↑	

TEST LIMITS = -21.4V to VDD

Q4(TERMINAL 6) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-.76			-.80	
7532 Y	52					-.56			-.60	
7538 CC	53					-.76			-.52	
7538 DD	54					-.56			-.56	
7538 D	55					-.48			-.60	
7531 A	56					-.84			-.80	
7538EE	57					-.48			-.60	
7538GG	58					-.84			-.60	
7538DD	59					-.76			-.76	
7538EE	60					-.56			-.52	

TEST LIMITS = 0.0V to -2.6V

M 11 (TERMINAL 7), V7M - SUBGROUP B2
SCALER INPUT(NEGATIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					1nA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-32.24				
7532 Y	52					-35.44				
7538 CC	53					-32.44				
7538 DD	54					-40.08				
7538 D	55					-36.20				
7531 A	56					-32.04				
7538EE	57					-35.96				
7538GG	58					-37.52				
7538DD	59					-40.68				
7538EE	60					-35.96				

TEST LIMITS = -28.0V Minimum

appendix d

MON (TERMINAL 9), V9M-SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-31.68				
7532 Y	52					-35.48				
7538 CC	53					-31.60				
7538 DD	54					-40.52				
7538 D	55					-36.76				
7531 A	56					-32.44				
7538EE	57					-37.72				
7538GG	58					-38.24				
7538DD	59					-40.64				
7538EE	60					-36.56				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9),V9P - SUBGROUP B2
SCALER INPUT (POSITIVE BREAKDOWN),VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					3m A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					+1.04				
7532 Y	52					+1.04				
7538 CC	53					+1.20				
7538 DD	54					+1.36				
7538 D	55					+1.04				
7531 A	56					+1.28				
7538EE	57					+4.08				
7538GG	58					+1.20				
7538DD	59					+1.44				
7538EE	60					+1.20				

TEST LIMITS = 0.0V to +6.0V

appendix d

CL (TERMINAL 10), V10M-SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-31.88				
7532 Y	52					-35.96				
7538 CO	53					-34.56				
7538 DD	54					-39.64				
7538 D	55					-36.92				
7531 A	56					-32.76				
7538EE	57					-39.00				
7538GG	58					-38.56				
7538DD	59					-40.80				
7538EE	60					-37.32				

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-10.20			-14.00			-19.20	
7532 Y	52		-10.16			-14.00			-19.28	
7538 CC	53		-10.72			-14.64			-20.04	
7538 DD	54		-10.04			-13.88			-19.12	
7538 D	55		-10.08			-13.88			-19.12	
7531 A	56		- 9.88			-13.68			-18.88	
7538EE	57		-10.20			-14.04			-19.32	
7538GG	58		- 9.88			-13.72			-18.96	
7538DD	59		- 9.92			-13.76			-19.00	
7538EE	60		-10.36			-14.24			-19.56	

TEST LIMITS = -8.0V to VDD

appendix d

SP (TERMINAL 11) - SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-.56			-.72			-1.12	
7532 Y	52		-.76			-.80			-1.68	
7538 CO	53		-.56			-1.08			-1.64	
7538 DD	54		-.60			-.80			-1.24	
7538 D	55		-.61			-.76			-1.72	
7531 A	56		-.56			-.76			-1.20	
7538EE	57		-.76			-.80			-1.52	
7538GG	58		-.56			-.44			-1.28	
7538DD	59		-.76			-1.32			-1.20	
7538EE	60		-.68			-.96			-1.48	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL) VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-10.20			-14.00			-19.24	
7532 Y	52		-10.16			-14.00			-19.28	
7538 CC	53		-10.76			-14.68			-20.08	
7538 DD	54		-10.00			-13.48			-19.04	
7538 D	55		-10.24			-14.08			-19.36	
7531 A	56		-10.00			-13.84			-19.04	
7538EE	57		-10.16			-14.00			-19.28	
7538GG	58		- 9.72			-13.52			-18.68	
7538DD	59		-10.08			-13.92			-19.20	
7538EE	60		-10.32			-14.20			-19.44	

TEST LIMITS = -8.0V to VDD

LP (TERMINAL 12)-SUBGROUPS B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-.34			-.24			-.76	
7532 Y	52		-.36			-.56			-.84	
7538 CC	53		-.44			-.84			-.76	
7538 DD	54		-.36			-.44			-.56	
7538 D	55		-.39			-.56			-.76	
7531 A	56		-.44			-.44			-.84	
7538EE	57		-.44			-.56			-.56	
7538GG	58		-.44			-.44			-.76	
7538DD	59		-.44			-.48			-.76	
7538EE	60		-.48			-.76			-.48	

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M- SUBGROUP B2 COLLINS DIVISIONS DATE 11-12-75
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-30.88				
7532 Y	52					-35.08				
7538 CC	53					-29.68				
7538 DD	54					-40.08				
7538 D	55					-33.24				
7531 A	56					-31.16				
7538EE	57					-37.76				
7538GG	58					-39.28				
7538DD	59					-40.84				
7538EE	60					-38.80				

TEST LIMITS = -28.0V Min.

G32 (TERMINAL 14) - SUBGROUP B4
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-10.28			-14.08			-19.32	
7532 Y	52		-10.16			-14.00			-19.28	
7538 CC	53		-10.60			-14.52			-19.84	
7538 DD	54		- 9.92			-13.76			-19.00	
7538 D	55		-10.20			-14.04			-19.32	
7531 A	56		-10.08			-13.92			-19.16	
7538EE	57		-10.20			-14.04			-19.32	
7538GG	58		- 9.80			-13.56			-18.80	
7538DD	59		- 9.96			-13.76			-19.00	
7538EE	60		-10.32			-14.00			-19.48	

TEST LIMITS = -8.0V to VDD

appendix d

G32 (TERMINAL 14) - SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER OUTPUT (HIGH LEVEL), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51		-.60			-.76			-.92	
7532 Y	52		-.68			-.84			-1.04	
7538 CC	53		-.68			-.84			-1.04	
7538 DD	54		-.68			-.84			-1.04	
7538 D	55		-.68			-.84			-1.08	
7531 A	56		-.68			-.84			-1.04	
7538EE	57		-.72			-.84			-1.08	
7538GG	58		-.72			-.84			-1.04	
7538DD	59		-.72			-.84			-1.04	
7538EE	60		-.76			-.88			-1.12	

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V15M- SUBGROUP B2

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-33.52				
7532 Y	52					-35.56				
7538 CC	53					-36.40				
7538 DD	54					-39.08				
7538 D	55					-36.24				
7531 A	56					-33.24				
7538EE	57					-36.88				
7538GG	58					-38.00				
7538DD	59					-40.12				
7538EE	60					-37.80				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B2
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-7.04			-11.16	
7532 Y	52					-7.52			-12.28	
7538 CC	53					-8.44			-12.92	
7538 DD	54					-7.28			-11.72	
7538 D	55					-7.20			-11.76	
7531 A	56					-7.28			-11.76	
7538EE	57					-8.12			-12.44	
7538GG	58					-6.32			-10.72	
7538DD	59					-7.60			-11.92	
7538EE	60					-8.36			-12.08	

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16)-SUBGROUP B2
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7532 G	51					-0.00			-0.00	
7532 Y	52					↑			↑	
7538 CC	53					↑			↑	
7538 DD	54					↑			↑	
7538 D	55					↑			↑	
7531 A	56					↑			↑	
7538EE	57					↑			↑	
7538GG	58					↑			↑	
7538DD	59					↑			↑	
7538EE	60					-0.00			-0.00	

TEST LIMITS = 0.0V to -0.1V

IDD (TERMINAL 1), 1A-Subgroup B3
SCALER BIAS (IDD CURRENT), MA

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76								-5.00	
7538 X	77								-4.90	
7538 LL	78								-4.80	
7532 NN	79								-4.70	
7532 H	80								-5.00	
7532 PP	81								-5.00	
7532 CC	82								-5.00	
7532 K	83								-5.10	
7532 BB	84								-4.70	
7532 U	85								-4.60	

TEST LIMITS = 2.0mA to 10.0mA

ARM (TERMINAL 3) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-16.96			-21.48			-27.52	
7538 X	77		-17.00			-21.48			-27.52	
7538 LL	78		-16.96			-21.48			-27.52	
7532 NN	79		-16.96			-21.48			-27.52	
7532 H	80		-16.96			-21.48			-27.52	
7532 PP	81		-16.96			-21.48			-27.52	
7532 CC	82		-16.96			-21.48			-27.52	
7532 K	83		-16.96			-21.48			-27.52	
7532 BB	84		-16.96			-21.48			-27.52	
7532 U	85		-16.96			-21.48			-27.52	

TEST LIMITS = -16.9V to VDD

ARM (TERMINAL 3) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-.24			-.24			-.24	
7538 X	77		-.28			-.24			-.28	
7538 LL	78		-.24			-.24			-.24	
7532 NN	79		-.23			-.24			-.25	
7532 H	80		-.24			-.24			-.24	
7532 PP	81		-.28			-.28			-.28	
7532 CC	82		-.24			-.28			-.28	
7532 K	83		-.23			-.24			-.24	
7532 BB	84		-.24			-.24			-.25	
7532 U	85		-.24			-.24			-.25	

TEST LIMITS = 0.0V to -2.0V

FIRE (TERMINAL 4) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-16.96			-21.48			-27.52	
7538 X	77		-16.96			-21.48			-27.52	
7538 LL	78		-16.96			-21.48			-27.52	
7532 NN	79		-16.96			-21.48			-27.52	
7532 H	80		-16.96			-21.48			-27.52	
7532 PP	81		-16.96			-21.48			-27.52	
7532 CC	82		-16.96			-21.48			-27.52	
7532 K	83		-16.96			-21.48			-27.52	
7532 BB	84		-16.96			-21.48			-27.52	
7532 U	85		-16.96			-21.48			-27.52	

TEST LIMITS = -16.9V to VDD

FIRE (TERMINAL 4) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-2.36			-2.28			-2.40	
7538 X	77		-2.52			-2.44			-2.40	
7538 LL	78		-2.28			-2.28			-2.60	
7532 NN	79		-2.52			-2.40			-2.60	
7532 H	80		-2.52			-2.44			-2.76	
7532 PP	81		-2.60			-2.40			-2.76	
7532 CC	82		-2.36			-2.40			-2.60	
7532 K	83		-2.44			-2.44			-2.60	
7532 BB	84		-2.60			-2.60			-2.88	
7532 U	85		-2.60			-2.60			-2.72	

TEST LIMITS = 0.0V to -10.0V

appendix d

G14 (TERMINAL 5), V5M-SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-33.16				
7538 X	77					-35.80				
7538 LL	78					-40.04				
7532 NN	79					-34.24				
7532 H	80					-33.08				
7532 PP	81					-31.68				
7532 CC	82					-30.20				
7532 K	83					-31.16				
7532 BB	84					-33.24				
7532 U	85					-32.88				

TEST LIMITS = -28.0V Minimum

Q4 (TERMINAL 6) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-21.48			-27.52	
7538 X	77					-21.48			-27.52	
7538 LL	78					-21.48			-27.52	
7532 NN	79					-21.48			-27.52	
7532 H	80					-21.48			-27.52	
7532 PP	81					-21.48			-27.52	
7532 CC	82					-21.48			-27.52	
7532 K	83					-21.48			-27.52	
7532 BB	84					-21.48			-27.52	
7532 U	85					-21.48			-27.52	

TEST LIMITS = -21.4V to VDD

appendix d

Q4 (TERMINAL 6) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-.56			-.52	
7538 X	77					-.56			-.72	
7538 LL	78					-.84			-.60	
7532 NN	79					-.84			-.72	
7532 H	80					-.76			-.72	
7532 PP	81					-.84			-.80	
7532 CC	82					-.76			-.72	
7532 K	83					-.84			-.60	
7532 BB	84					-.84			-.72	
7532 U	85					-.56			-.72	

TEST LIMITS = 0.0V to -2.6V

M11 (TERMINAL 7), V7M - SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 11-12-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-37.68				
7538 X	77					-34.16				
7538 LL	78					-40.12				
7532 NN	79					-33.40				
7532 H	80					-32.08				
7532 PP	81					-32.32				
7532 CC	82					-32.00				
7532 K	83					-30.36				
7532 BB	84					-33.84				
7532 U	85					-32.52				

TEST LIMITS = -28.0V Minimum

appendix d

MON (TERMINAL 9), V9M-SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification					10 μ A.					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-34.80				
7538 X	77					-36.40				
7538 LL	78					-40.28				
7532 NN	79					-34.56				
7532 H	80					-33.00				
7532 PP	81					-31.92				
7532 CC	82					-33.60				
7532 K	83					-31.08				
7532 BB	84					-35.00				
7532 U	85					-33.44				

TEST LIMITS = -28.0 Minimum

MON (TERMINAL 9), V9P - SUBGROUP B3

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (POSITIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					3mA					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					+1.16				
7538 X	77					+1.28				
7538 LL	78					+1.12				
7532 NN	79					+1.16				
7532 H	80					+1.36				
7532 PP	81					+1.04				
7532 CC	82					+1.04				
7532 K	83					+1.08				
7532 BB	84					+1.16				
7532 U	85					+1.36				

TEST LIMITS = 0.0V to +6.0V

appendix d

CL (TERMINAL 10), V10M - SUBGROUP B3

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL

NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-36.76				
7538 X	77					-36.12				
7538 LL	78					-40.28				
7532 NN	79					-34.40				
7532 H	80					-33.40				
7532 PP	81					-32.36				
7532 CC	82					-31.84				
7532 K	83					-31.68				
7532 BB	84					-35.84				
7532 U	85					-35.00				

TEST LIMITS = -28.0V Minimum

SP (TERMINAL 11) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-10.52			-14.48			-19.76	
7538 X	77		-10.04			-13.88			-19.20	
7538 LL	78		- 9.96			-13.76			-19.00	
7532 NN	79		-10.16			-13.96			-19.20	
7532 H	80		-10.08			-13.92			-19.20	
7532 PP	81		-10.48			-14.36			-19.64	
7532 CC	82		-10.36			-14.20			-19.48	
7532 K	83		-10.32			-14.20			-19.44	
7532 BB	84		-10.04			-13.84			-19.00	
7532 U	85		-10.28			-14.16			-19.44	

TEST LIMITS = -8.0V to VDD

appendix d

SP (TERMINAL 11) - SUBGROUPS B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-.72			-.84			-1.20	
7538 X	77		-.84			-.76			-1.36	
7538 LL	78		-.56			-.80			-1.52	
7532 NN	79		-.76			-.80			-1.28	
7532 H	80		-.60			-.76			-1.32	
7532 PP	81		-.76			-.80			-1.32	
7532 CC	82		-.56			-1.08			-1.72	
7532 K	83		-.68			-.80			-1.36	
7532 BB	84		-.76			-.76			-1.36	
7532 U	85		-.60			-.76			-1.28	

TEST LIMITS = 0.0V to -2.0V

LP (TERMINAL 12) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-10.48			-14.44			-19.72	
7538 X	77		- 9.96			-13.88			-19.16	
7538 LL	78		-10.00			-13.80			-19.00	
7532 NN	79		-10.16			-14.00			-19.20	
7532 H	80		- 9.96			-13.76			-19.00	
7532 PP	81		-10.32			-14.20			-19.44	
7532 CC	82		-10.32			-14.20			-19.44	
7532 K	83		-10.36			-14.24			-19.56	
7532 BB	84		-10.04			-13.84			-19.00	
7532 U	85		-10.32			-14.32			-19.48	

TEST LIMITS = -8.0V to VDD

appendix d

LP (TERMINAL 12) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-.36			-.56			-.84	
7538 X	77		-.44			-.44			-.48	
7538 LL	78		-.36			-.24			-.56	
7532 NN	79		-.36			-.44			-.84	
7532 H	80		-.36			-.44			-.48	
7532 PP	81		-.32			-.44			-.56	
7532 CC	82		-.40			-.40			-.48	
7532 K	83		-.40			-.48			-.56	
7532 BB	84		-.40			-.44			-.76	
7532 U	85		-.36			-.44			-.76	

TEST LIMITS = 0.0V to -2.0V

INH (TERMINAL 13), V13M- SUBGROUP B3

COLLINS DIVISIONS

DATE 11-12-75

SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-35.20				
7538 X	77					-33.52				
7538 LL	78					-40.12				
7532 NN	79					-32.08				
7532 H	80					-33.20				
7532 PP	81					-32.08				
7532 CC	82					-31.80				
7532 K	83					-31.00				
7532 BB	84					-35.00				
7532 U	85					-33.44				

TEST LIMITS = -28.0V Min.

appendix d

G32 (TERMINAL 14) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL),

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-10.48			-14.36			-19.68	
7538 X	77		-10.00			-13.88			-19.20	
7538 LL	78		-10.04			-13.88			-19.12	
7532 NN	79		-10.16			-14.00			-19.20	
7532 H	80		- 9.92			-13.72			-19.00	
7532 PP	81		-10.44			-14.32			-19.60	
7532 CC	82		-10.32			-14.20			-19.22	
7532 K	83		-10.08			-13.92			-19.16	
7532 BB	84		-10.04			-13.88			-19.04	
7532 U	85		-10.32			-14.16			-19.44	

TEST LIMITS = -8.0V to VDD

G32 (TERMINAL 14) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76		-.68			-.84			-1.04	
7538 X	77		-.72			-.88			-1.08	
7538 LL	78		-.68			-.84			-1.04	
7532 NN	79		-.72			-.88			-1.08	
7532 H	80		-.72			-.88			-1.08	
7532 PP	81		-.72			-.84			-1.08	
7532 CC	82		-.72			-.88			-1.08	
7532 K	83		-.72			-.88			-1.08	
7532 BB	84		-.72			-.88			-1.08	
7532 U	85		-.72			-.88			-1.08	

TEST LIMITS = 0.0V to -2.0V

appendix d

FP (TERMINAL 15), V16M - SUBGROUP B3
SCALER INPUT (NEGATIVE BREAKDOWN), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

DATE 11-12-75

Device Identification					10 μ A					
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-36.00				
7538 X	77					-34.04				
7538 LL	78					-40.12				
7532 NN	79					-32.64				
7532 H	80					-32.24				
7532 PP	81					-32.60				
7532 CC	82					-32.92				
7532 K	83					-32.28				
7532 BB	84					-35.44				
7532 U	85					-34.40				

TEST LIMITS = -28.0V Minimum

Q6 (TERMINAL 16) - SUBGROUP B3
SCALER OUTPUT (LOW LEVEL), VOLTS

COLLINS DIVISIONS
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF. DATE 11-12-75

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-8.56			-13.24	
7538 X	77					-7.80			-11.76	
7538 LL	78					-7.28			-11.48	
7532 NN	79					-7.80			-11.92	
7532 H	80					-7.28			-11.48	
7532 PP	81					-8.08			-12.20	
7532 CC	82					-7.60			-11.48	
7532 K	83					-8.12			-11.76	
7532 BB	84					-6.88			-11.76	
7532 U	85					-7.28			-11.96	

TEST LIMITS = -4.0V to VDD

Q6 (TERMINAL 16) - SUBGROUP B3
SCALER OUTPUT (HIGH LEVEL), VOLTS

COLLINS DIVISIONS DATE 11-12-75
ROCKWELL INTERNATIONAL
NEWPORT BEACH, CALIF.

Device Identification		-17.0V			-21.5V			-27.6V		
DATE CODE	UNIT NO.	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C	-55°C	+25°C	+75°C
7538 NN	76					-0.00			-0.00	
7538 X	77					↓			↓	
7538 LL	78									
7532 NN	79									
7532 H	80									
7532 PP	81									
7532 CC	82									
7532 K	83									
7532 BB	84					↓			↓	
7532 U	85					-0.00			-0.00	

TEST LIMITS = 0.0V to -0.1V

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